

ANNUAL REPORT
OF THE
Department of Lands and Mines
OF THE
PROVINCE OF ALBERTA
FOR THE
**Fiscal Year Ended March 31st
1936**

PUBLISHED BY ORDER OF THE LEGISLATIVE ASSEMBLY



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1937

*To the Honourable J. C. Bowen,
Lieutenant-Governor of the Province of Alberta.*

SIR:

I have the honour to submit the report of the Department of Lands and Mines for the fiscal year ended March 31st, 1936.

I have the honour to be, Sir,

Your obedient servant,

N. E. TANNER,

Minister of Lands and Mines.

EDMONTON, April 6th, 1937.

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CHIEF OFFICERS
DEPARTMENT OF LANDS AND MINES
March 31st, 1936

Honourable Charles C. Ross.....*Minister of Lands and Mines*

John Harvie*Deputy Minister of Lands and Mines*

T. C. Rankine*Departmental Solicitor*

D. H. Boles*Director of Lands*

G. A. Forster*Supervisor of Grazing*

J. W. Stafford*Superintendent of School Lands*

J. W. Hamilton*Superintendent of Mining Lands*

T. W. Dalkin*Superintendent of the Technical Division*

C. W. Dingman*Director of Petroleum and Natural Gas*

T. F. Blefgen*Director of Forestry*

J. A. Hutchison*Assistant Director of Forestry*

F. W. Neilson*Chief Timber Inspector*

R. T. Rodd*Director of Fisheries*

I. N. McKinnon*Accountant*

R. J. Dean*Inspector of Revenue*

A. A. Millar*Chief Inspector, The Coal-mines Regulation Act*

M. Gossip*Agent, Calgary Land Agency*

R. Cruickshank*Agent, Lethbridge Land Agency*

J. J. E. Clarke*Agent, Peace River Land Agency*

J. L. Irwin*Statistician*

REPORT

OF THE

Department of Lands and Mines,

1935-36

*Honourable N. E. Tanner,
Minister of Lands and Mines,
Edmonton.*

SIR:

I have the honour to submit the sixth Annual Report of the Department of Lands and Mines for the fiscal year ended March 31st, 1936.

REORGANIZATION OF THE DEPARTMENT

At the opening of the fiscal year under review a reorganization of the Department with a view to securing greater efficiency was put into effect. Changes which were made included the creation of a School Lands Division, a Mining Lands Division and the elimination of the Edmonton Land Agency.

School Lands Division.—The School Lands Division is responsible for the administration of all lands of the School Endowment in accordance with the provisions of the Provincial Lands Act and regulations as established by the Lieutenant-Governor in Council under authority of the said Act.

Administration of the new Division deals with the maintenance of complete index and filing systems, authentic records, applications for surface rights, enforcement of payments owing on land purchases, leases, etc., and the collection of crop shares on cultivation leases together with the marketing of grain paid on a crop share basis.

Mining Lands Division.—Functions of this new Division include the disposition of mineral rights in provincial and school lands under authority of the Provincial Lands Act and regulations as promulgated by the Lieutenant-Governor in Council.

Administration deals with applications for mining rights, issuance of leases, registration of assignments and cancellation of rights.

All business relative to credits and royalties, combined with the duties of Mining Recorder for the Edmonton District, are also responsibilities of the Division.

Abolition of the Edmonton Land Agency.—In the general process of reorganization the abolition of the Edmonton Land Agency became obvious for the purpose of eliminating duplication of records.

The closing of this Agency took effect therefore at the beginning of the year and the area of the Edmonton Land District with all the business accustomed to be transacted therein came under the control of the various Divisions of the Department to which they were applicable.

THREE ROYAL COMMISSIONS

During the period of this Report three Royal Commissions were held which bore a direct relationship to the activities of this Department.

The first, the Report of which was presented in December, 1935, was an investigation respecting the coal industry of the Province of Alberta. The Rt. Hon. Sir Montague Barlow, Bart., P.C., K.B.E., LL.D., was appointed as Commissioner for this Enquiry.

The second, reported on February 15th, 1936, was held for the purpose of investigating conditions of the Metis population of this Province. Commissioners sitting on this Enquiry were the Hon. A. F. Ewing, Judge of the Supreme Court of Alberta, J. M. Douglas, Stipendiary Magistrate for the Northwest Territories, and Dr. E. A. Braithwaite, Coroner and Inspector of Hospitals, Department of Public Health. T. C. Rankine, Departmental Solicitor, Department of Lands and Mines, was appointed Secretary to the Commission.

The third, under the Commissionership of the Hon. H. W. Lunney, Judge of the Supreme Court of Alberta, was carried out with a view to conducting an Enquiry into the Coalhurst mining disaster which occurred on December 9th, 1935. The Report of this Enquiry is dated April 14th, 1936, two weeks after the close of the fiscal year. The disaster, however, having taken place within the period under departmental review and the investigation as to cause being under way at the close of the fiscal year, the Report of this Commission is included as a section of this Annual Report of the Department.

A résumé of the three Royal Commissions follows.

REPORT OF THE ROYAL COMMISSION RESPECTING THE COAL INDUSTRY
OF THE PROVINCE OF ALBERTA, 1935

Commissioner

Rt. Hon. Sir Montague Barlow, Bart., P.C., K.B.E., LL.D.

This Report, presented by the Rt. Hon. Sir Montague Barlow, Bart., P.C., K.B.E., LL.D., Commissioner presiding at the Enquiry, covers in considerable detail an investigation carried out with a view to the general betterment of Alberta's coal-mining industry.

Authorization by Order in Council.—The Commission for this Enquiry was created pursuant to authorization by Order in Council, Government of the Province of Alberta, dated September 13th, 1935.

Published Report.—The Report covering this investigation has been published in printed form by the Government of the Province of Alberta.

Subject-matter of the Report.—Subject-matter of the Report is as follows:

- Letter of Presentation to his Honour the Lieutenant-Governor in Council;
- Publication of the Order in Council creating the Commission;
- Recommendations made as result of the Enquiry;
- Seven Chapters into which the main body of the Report is divided;
- Two Appendices dealing with
 - (I) Aggregate profits and Losses and
 - (II) Analyses of Coal.

Acknowledgment.—On the opening page the Commissioner acknowledges the skilled assistance, which, in compiling this Report, he received from William Armour, Esq. of the Mines Department of Great Britain, who acted as

Technical Adviser, and from the following Government of Alberta officials: R. Andrew Smith, Esq., K.C., Legislative Counsel, who acted as Counsel and Secretary, Andrew A. Millar, Esq., Chief Inspector, The Coal-mines Regulation Act, Department of Lands and Mines, and James C. Thompson, Esq., C.A., Provincial Auditor, and representatives of his Department.

Résumé of the Report.—A résumé of the Report, divided into the seven chapters already referred to, follows.

Chapter I.—Chapter I, under the heading of Introductory, opens with a reference to the Commission constituted by Order in Council dated September 13th, 1935, made under the Public Enquiries Act, 1922.

Following is a list of the names of Alberta cities and towns at which sittings for the reception of evidence were held. The dates of each are given together with the names of Counsel appearing before the Commissioner on behalf of their clients. A verbatim report of the proceedings of these sittings, it is stated, is filed for reference with the Mines Branch of the Department of Lands and Mines, Edmonton.

Mention of the circulation of two questionnaires, to be answered respectively by operators and miners, follows with the information that answers thereto are filed with the other documents.

The balance of the Introductory Chapter refers to the changes which have taken place in Alberta's coal industry since 1925 and points to the fact that the present Enquiry is concerned mainly with the questions of marketing, regulation and social problems.

The chapter concludes with a statement of appreciation to all who have assisted in the Enquiry. To the names of officials already mentioned, the appreciation adds those of Miss Perkins, U.S. Secretary of Labour at Washington, Mr. H. B. Butler, Director of the International Labour Office at Geneva and the staffs of their respective Departments, Mr. Howard Stutchbury, Alberta Trade Commissioner, his Assistant in Toronto, Mr. E. S. Clarry and Mr. C. K. Huckvale of the Audit Department, Government of the Province of Alberta.

The subjects dealt with in Chapters II to VII of the Report are as follows:

Chapter II.—RESOURCES AND DEVELOPMENT

1. Coal resources and Ownership
2. Mining Development and Output
Estimated capacity of present Alberta Mines Output
3. Coal Utilization
Electrical Development
Carbonization
Hydrogenation

Chapter III.—OPERATING CONDITIONS AND PRACTICE

1. Equipment
2. Mining Practice

Chapter IV.—CAPITALIZATION—PROFITS OR LOSSES—MANAGEMENT COSTS

1. Capitalization
2. Aggregate Profits and Losses
3. Increase of Cost due to Lost Time
4. Conclusion

Chapter V.—MARKETING

1. Coal Consumption in Canada
2. General Survey of Alberta's markets
3. Railway Market

4. Market in Alberta; Competition from Gas
5. Markets in the Canadian provinces, dealt with individually
6. Market in the United States
7. Recommendations
8. Conclusion

Chapter VI.—MINE WORKMEN AND LABOUR RELATIONS

1. Composition of the working force
 - (i) Persons engaged
 - (ii) Too many workmen
2. Operators' Organizations: Recommendation
3. Labour Organizations
4. Wages and Working Conditions
 - Minimum Wage
 - Minimum Wage in Small Mines
 - Payment by measurement or Weight
 - Wash-houses
5. Housing
6. Closed Camps
 - Access
 - Monopoly
 - Education
 - General
7. Workmen's Compensation
8. Unemployment Insurance
9. Mine Rescue Work—Recommendations
10. Miners' Certificates—Recommendation
11. Mining Industry Welfare Fund—Recommendation

Chapter VII.—REGULATION

1. Introduction
2. Germany, Great Britain, United States of America and Saskatchewan
 - (i) Germany
 - (ii) Great Britain
 - (a) Part I of the Coal-mines Regulation Act 1930
 - (b) Administration of Part I
 - Output and Quotas
 - Price Regulation
 - Central Selling Agency
 - (c) Part II of the Coal-mines Regulation Act 1930
 - Conclusion
 - (iii) United States of America
 - The Guffey Act
 - Appalachian Selling Agency
 - (iv) Saskatchewan
3. Legal Regulation in Canada generally
4. Legal Regulation in Alberta generally; and for the Coal Industry
 - Recommendations
5. Coal Conditions in Alberta Disorganized
 - Small Mines
 - Trucking
 - Trade Names
6. Efforts at Voluntary Organization in the Coal Industry
 - (i) Drumheller
 - (ii) Edmonton
 - (iii) Amalgamation
 - (iv) Unfair Practices
7. Organization in the future
8. Board to manage the Coal Industry not desirable
9. Control of Development—Regulation necessary—Recommendations
10. Need of a Code—Recommendations
 - (i) Code
 - (ii) Price Fixation
 - (iii) Minimum Wage

11. Quotas—Central Selling Agencies—Amalgamation

- (i) Domestic Coal
 - (a) Quotas
 - (b) Central Selling Agencies
 - (c) Amalgamation Recommendations
- (ii) Steam Coal
 - (a) Irregular Employment
 - (b) Equipment
 - (c) Oil in Locomotives
 - (d) Closing Pits
 - (e) National Policy
 - (f) Conclusions

APPENDICES

- I. Aggregate Profits and Losses
- II. Analyses of Coal

Recommendations.—The recommendations of the Report are given immediately prior to the first chapter.

Opening under the heading of the Ontario Market, the proposal for a continuation of subventions is made. Elaboration of the various points bearing relationship to such consideration follows.

The balance of this section of the Report makes detailed recommendations regarding the following subjects:

- Operators' Association
- Mine Rescue Work
- Miners' Certificates
- Mining Industry Welfare Fund
- Powers to be Transferred
- Control of Development
- Formulation of a Code
- Fixed Prices—Minimum Wage in small Mines
- Quotas—Central Selling Agencies
- Amalgamation

REPORT OF THE ROYAL COMMISSION TO INVESTIGATE CONDITIONS OF THE
HALF-BREED POPULATION OF ALBERTA, 1936*Commissioners*

Hon. A. F. Ewing, Judge of the Supreme Court of Alberta
 J. M. Douglas, Stipendiary Magistrate for the Northwest Territories
 Dr. E. A. Braithwaite, Coroner and Inspector of Hospitals, Department of
 Public Health, Province of Alberta

Secretary to the Commission

T. C. Rankine, Departmental Solicitor, Department of Lands and Mines.

Under the chairmanship of the Hon. A. F. Ewing, Judge of the Supreme Court of Alberta, this Report, dated at Edmonton, February 15th, 1936, deals with an investigation into the conditions of the half-breed population of Alberta.

Authorization.—A Resolution of the Alberta Legislature dated February 27th, 1933, and an Order in Council dated December 12th, 1934, the latter containing appointment of the Commissioners, constitute the Authority for this Enquiry being held.

Published Report.—The Report covering the investigation is published in mimeographed form by the Department of Lands and Mines.

Report of the Commission.—The Report of the Commission gives a detailed account of the extensive investigation which was held.

Meetings took place in Edmonton and also at High Prairie, Lac la Biche, Goodfish Lake, Grand Cache, Chipewyan, Athabaska, Groff, Frog Lake and Marlboro.

A review of this situation and its long and interesting history of Alberta, dating almost to Confederation, is given. This review deals with the nomadic nature of the Metis people, who in lacking business foresight were vulnerable to the wiles and persuasions of speculators and others which resulted in the loss of their scrip.

The Report continues under the headings of health, education and general conditions and concludes with detailed recommendations.

REPORT OF THE ROYAL COMMISSION CONDUCTING ENQUIRY INTO THE COALHURST MINING DISASTER, ALBERTA, ON DECEMBER 9TH, 1935

Commissioner

Hon. H. W. Lunney, Judge of the Supreme Court of Alberta

Under the Commissionership of the Hon. H. W. Lunney, Judge of the Supreme Court of Alberta, an Enquiry was conducted into the Coalhurst mining disaster which took place in the Imperial mine operated by the Lethbridge Collieries at Coalhurst, Alberta, on December 9th, 1935 at approximately 3:30 p.m.

Authorization.—Authorization for conducting this Enquiry is contained in an Order in Council of the Alberta Legislature dated January 14th, 1936.

Published Report.—The Report, dated April 14th, 1936, is published in mimeographed form by the Department of Lands and Mines.

Report of the Enquiry.—The Report of the Enquiry into the Coalhurst mining disaster in which the lives of sixteen men were lost opens with a description of events at the mine on the day the explosion took place, the number of men engaged in the day shift and their relative positions at the time of the accident.

Continuing, it goes exhaustively into an examination of everything in the nature of direct air currents, safety lamps, voltage of electricity used, etc., with a view to establishing a cause for the disaster.

The finding of the Commission points to evidence which "clearly established that the explosion was caused by gas which had formed at the cave or overcast, that the gas came from the old workings and the explosion may have occurred in the old workings or in the new workings."

A transcript of the evidence and a list of the exhibits connected with this Enquiry are on file in the Court House at Lethbridge.

DEPARTMENT'S INCREASED REVENUE AND PRODUCTION, 1935-36

A departmental surplus of \$647,931.21 compares favourably with last year's figure of \$646,528.97, showing an increase of \$1,402.24. A decrease of \$17,020.37 in the revenue for the year is compensated for by a greater decrease in expenditure of \$18,422.61.

Improvements for the year are shown by the following increases: petroleum production, 2,638 barrels; natural gas consumption, 2,074,885 Mcf.*; timber revenue, \$76,500.86; production of commercial fish, 862,106 lbs. with value of increase to fishermen, \$55,204.46 and value of increase as marketed, \$43,655.23.

Coal produced during the calendar year, 1935, showed an increase of 714,125 tons. Coke production increased by 3,725 tons and briquettes by 2,906 tons. Additional electrical power, increased by 3,663,752 k.w.hrs.,† was used in operation of Alberta coal-mines during the year.

Shale mined during the calendar year showed an increased production of 6,697 tons with an increase in the number of bricks manufactured therefrom of 2,951,268.

The above mentioned increases were, however, offset by a decrease in school lands' revenue amounting to \$136,200.17 which was mainly due to a drop in interest collections on school lands' sales.

PROVINCIAL LANDS ADMINISTRATION

Details of all matters pertaining to provincial lands' administration are given in the section of this Report belonging to that Division.

Homestead Entries.—First and second homestead entries and soldier grants during the year totalled 1,528 covering approximately 244,480 acres in comparison with 2,780 representing an approximate acreage of 444,800 for the previous fiscal year.

Comparative statement showing totals of homestead entries and soldier grants from 1930-31 to 1935-36 follows. Fuller details of this information appear in the Accounting Division's section of this Report and in similar sections of the Annual Reports of preceding years. The decrease of 1,252 homesteads and soldier grants shown in the statement below is due principally to restriction from settlement of areas south of township 51, west of the 5th meridian and in the Grande Prairie district north of township 64.

HOMESTEAD ENTRIES GRANTED

Fiscal Year	Homesteads	Second Homesteads	Soldier Grants	Total	Homesteads Granted to Women
1930-31	3,042	557	149	3,748	.....
1931-32	3,876	522	30	4,428	1,521
1932-33	3,112	358	29	3,499	976
1933-34	2,984	696	26	3,706	1,011
1934-35	2,425	325	30	2,780	835
1935-36	1,329	186	13	1,528	455
Totals.....	16,768	2,644	277	19,689	4,798
Decreases this year in comparison with last ..	1,096	139	17	1,252	380

NOTE.—Homesteads for women were not available until 1932. The total number of women's homesteads as shown in the above statement is included in the first homestead total.

GRAZING

The present status of the livestock industry in Alberta is dealt with in detail by the Supervisor of Grazing in a later section of this Report.

As a result of inspections carried out during the year it is revealed that nowhere is there any great area of grass with available water supply which is

*Mcf.—Thousand cubic feet.

†K.w.hrs.—Kilowatt hours.

not utilized. Over-grazing in the southern part of the Province is the result of continued droughts.

The construction of stock-watering dams and dug-outs for the development of a water supply is reviewed together with the obvious fact that grass without such supply cannot be advantageously used.

The establishment of government grazing reserves to alleviate the present situation is also dealt with. The report finishes with a statement showing numbers of inspections applied for and made.

SCHOOL LANDS ADMINISTRATION

The purpose of school lands' administration is given fully in the section of this Report belonging to the School Lands Division.

The report of this Division gives also in detail the following subjects with which the years' administration has been concerned: auction sales, sales in force, revenue, amendment to The Provincial Lands Act, timber and hay.

A complete set of records and filing system is maintained. Information of a miscellaneous nature in connection with the Division's work is also recorded.

MINING LANDS ADMINISTRATION

The section of this Report belonging to the Mining Lands Division outlines the nature of its administration and performance of duties.

Leases Dealt With.—An itemized statement is shown, which deals with leases in connection with petroleum and natural gas from provincial, school lands and Crown reserves, coal from provincial lands and school lands, quarrying, quartz mining, salt, gypsum, tar sands, miscellaneous and dredging, and gives the following totals between the period, October 1st, 1930, date of the natural resources transfer to the Province, and March 31st, 1936: leases active at date of transfer, 19,634; issued since that date, 2,320; divided, 59; cancelled, 17,935; renewed, 172; active, March 31st, 1936, 3,906.

Fees, Rentals and Royalties, Petroleum and Natural Gas.—Fees and rentals collected for petroleum and natural gas during the year totalled \$115,543.40. Royalty collections amounted to \$117,468.36.

Fees, Rentals and Royalties, Coal.—Fees and rentals collected for coal totalled \$117,741.55. Royalty collections amounted to \$186,691.23.

Number and Area of Leases and Prospecting Permits.—Leases in force at the close of the year under review totalled 3,437 covering 664,440.76 acres. Prospecting permits at this date numbered 54 comprising an area of 240,436.33 acres. Details of this information are given in the Division's section of this Report.

WORK OF THE TECHNICAL DIVISION

Issue of Notifications.—The number of legal descriptions prepared during the year for notifications (land patents) and total area of land covered thereby exceeded that of any previous year since the transfer of the natural resources to the Province.

The following comparative statement shows the number of notifications and acreage covered by same for the fiscal years 1930-31 to 1935-36:

Fiscal Year	NOTIFICATIONS ISSUED	
	Number of Notifications	Area, Acres
*1930-31	23	3,019.71
1931-32	784	111,424.478
1932-33	1,260	178,887.233
1933-34	1,106	165,224.553
1934-35	2,006	324,611.398
1935-36	2,965	433,529.126
Totals	8,144	1,216,696.498
Increases this year in comparison with last	959	108,917.728

*Six months period.

Roadways.—The number of plans filed with this Division by the Department of Public Works during the year totalled 40. These affected 160 parcels of Crown lands. Some of these surveys affected lands alienated by sales, etc., and in such cases quit claims were obtained for the payment of compensation exacted.

Railways.—The balance of railway plans were received from Ottawa and duly recorded and indexed upon the maps of this Department in order to complete the railway right of way records.

Transmission Lines.—Applications for licenses of occupation were received from and granted to the Calgary Power Company, Limited, and the Canadian Utilities, Limited, covering power transmission lines.

Grazing.—Legal descriptions numbering approximately 350 were prepared in connection with a large number of outstanding grazing applications. During the year the issue of leases on lands given up by the recession of waters of lakes was started, 250 of these descriptions being prepared.

New Maps.—A new map of the Edmonton district, 12½ miles to the inch, was issued. Publication was effected in Ottawa in collaboration with the Surveyor-General and 4,000 copies were received.

The general demand for the re-issue of the map of the Province, 17½ miles to the inch, necessitated at the end of the year a commitment for another 3,000 copies, 1,000 to be lithographed in black and blue and 2,000 to show additional information regarding highways. Still another re-issue is anticipated later and work is proceeding with a view to bringing the new map up to date in every particular.

It is interesting to note that a new map of Alberta is in course of preparation by the Surveyor-General at Ottawa on the scale of 16 miles to the inch. This map is to be issued in 2 sheets, the southern one to be given prior attention. A similar scale map is to be made available covering Saskatchewan and Manitoba.

During the year an unusual number of drafting and mathematical computations were executed. Wherever possible assistance was given in co-operating with other Departments in the supply of maps, sketches and plans covering a variety of subjects.

PETROLEUM AND NATURAL GAS

A noticeable increase in the development activity of the Province's oil fields was experienced during the year. The operation of wells on the west flank of Turner Valley in the southern end was followed with a confidence which anticipated that this area would be productive of very satisfying results. Drilling

in unproved areas of the Province was also carried out on a larger scale than heretofore.

Amendments to Regulations.—Amendments to regulations effected during the year assisted very greatly in the general renewal of interest covering the Province's petroleum industry.

Outstanding in this respect were changes which set out the expenditures allowable in lieu of rentals and which provided for the unitization of royalties.

Progress in Different Fields.—Drilling activity in addition to the operations in Turner Valley were either started or resumed near Lundbreck, Pincher Creek, Hunter Valley, New Valley and Comrey.

Quotas for Gas Withdrawals.—Quotas for gas withdrawals were discontinued during the year, no penalties having been imposed for violations of the regulation governing this procedure.

Repressuring of the Bow Island Field.—Repressuring of the Bow Island Field was continued as in previous years with pressure at the end of the year under review being approximately 504 pounds.

Bituminous Sands.—The erection of a plant for separating sand from bitumen is to take place, it is understood, during 1936, interests from the United States having acquired leases in the McMurray area with a view to engaging in this new industry.

Petroleum Production.—A detailed summary of oil production from 1914 to the end of the fiscal year under review is given in the Petroleum and Natural Gas Division's section of this Report.

NATURAL GAS CONSUMPTION	
Fiscal Year	Mcf.
*1929-30	23,228,637
*1930-31	23,312,006
1931-32	18,327,139
1932-33	16,061,383
1933-34	16,346,376
1934-35	16,600,059
1935-36	18,674,944
Total	132,550,544
Increase this year in comparison with last	2,074.885

*Under federal administration prior to October 1st, 1930, and under provincial following that date.

†Mcf.—Thousand cubic feet.

FOREST SERVICE

The abolition of the Edmonton Land Agency,—with its former responsibilities transferred to those Divisions of the Department to which they were directly applicable,—resulted in an addition to the administrative duties of the Forest Service. These added duties included all matters relative to timber on provincial lands. The portion of the Edmonton Agency staff, formerly engaged in this work, was transferred to the head office staff of the Forest Service for the purpose of carrying on with these duties under the new supervision.

Fire Season.—It is probable that the Province of Alberta will never again experience a fire season during which destruction of timber was so insignificant. Cost of fire-fighting was reduced to a minimum. This unusual situation is explained by regular rains over wide-spread areas combined with vigilance on the part of the field staff.

A summary of fire losses within and outside Alberta forest reserves from October 1st, 1930, date of the natural resources transfer from dominion to provincial control, to December 31st, 1935 is given on the next page.

Timber Industry.—Timber operations of all kinds on berths and permits on provincial and school lands together with permits and sales in forest reserves showed an appreciable increase during the year. A detailed statement of these operations is given in the sections of this Report dealing with Forestry and School Lands' administration.

Grazing on Forest Reserves.—An increase of forest reserve grazing permits appears for the year. Increases are also shown in numbers of cattle and sheep grazing on forest reserve pastures but a decrease is shown in horses.

SUMMARY OF FIRE LOSSES WITHIN ALBERTA FOREST RESERVES

Period	Number of Fires	Cost of Suppression	Area (Acres)	Salvable Timber *M.f.b.m.	Salvable Timber (Cords)	Unsalvable Timber *M.f.b.m.	Unsalvable Timber (Cords)	Total Loss
October 1, 1930 to March 31, 1931.....	9	\$ 551.67	41.925	.....	.....	.....	129.00	\$ 71.69
April 1, 1931 to December 31, 1931.....	31	17,624.12	52,218.05	2,370.5	3,086	6,295.73	111,599.00	154,651.47
Calendar Year 1932.....	32	3,491.04	2,555.75	8	15,863	3,845.60	1,005.60	8,790.73
Calendar Year 1933.....	39	18,409.92	29,275.88	26.75	1,201	19,188.25	108,414.00	95,796.93
Calendar Year 1934.....	47	31,118.51	21,963.00	1,510	9,200	2,661.00	209,550.00	96,195.87
Calendar Year 1935.....	12	94.56	6.50	.....	.....	.....	60.00	45.50
TOTALS.....	170	\$ 71,289.82	106,061.105	3,915.25	29,350	31,991.98	430,757.60	\$ 355,552.19

SUMMARY OF FIRE LOSSES OUTSIDE ALBERTA FOREST RESERVES

October 1, 1930 to March 31, 1931.....	47	\$ 686.64	11,145.19	155.00	.....	.....	684,625.5	\$ 79,950.85
April 1, 1931 to December 31, 1931.....	591	82,088.89	552,658.07	134,536.00	104,199.00	122,690.5	132,743.00	712,835.79
Calendar Year 1932.....	347	15,320.51	133,569.14	274.75	12,215.00	40,627.15	59,545.00	152,083.58
Calendar Year 1933.....	249	16,971.75	64,489.12	4,383.50	13,953.50	41,694.50	14,464.00	100,008.43
Calendar Year 1934.....	193	7,050.51	56,907.00	3,404.50	3,159.00	547.50	.....	29,825.77
Calendar Year 1935.....	85	1,558.90	6,313.25	160.00	1,195.00	1,513.00	5,371.00	5,722.50
TOTALS.....	1,512	\$123,677.20	805,074.77	142,913.75	134,721.50	207,076.40	896,748.5	\$1,080,428.92

SUMMARY OF FIRE LOSSES WITHIN AND OUTSIDE ALBERTA FOREST RESERVES

October 1, 1930 to March 31, 1931.....	56	\$ 1,238.31	11,187.115	155.00	.....	.....	129.00	\$ 80,022.54
April 1, 1931 to December 31, 1931.....	622	99,713.01	604,876.12	136,906.5	107,285.00	123,986.23	796,224.5	867,487.26
Calendar Year 1932.....	378	18,611.55	136,177.89	282.75	28,078.00	44,472.15	133,748.60	160,876.31
Calendar Year 1933.....	288	33,381.67	93,765.00	4,410.25	15,154.50	60,882.75	167,959.00	195,805.36
Calendar Year 1934.....	240	36,169.02	58,870.00	4,914.50	12,359.00	3,208.50	224,014.00	126,021.64
Calendar Year 1935.....	97	1,653.46	6,319.75	160.00	1,195.00	1,513.00	5,451.00	5,768.00
TOTALS.....	1,682	\$194,967.02	911,135.875	146,829.00	164,071.50	239,068.38	1,327,506.10	\$1,435,981.11

*M.f.b.m.—Thousand feet, board measure

A comparative annual statement dealing with forest reserve grazing is given in the Forestry section of this Report.

Nursery and Tree Distribution.—Oliver Institute continued nursery operations as in the preceding year but with the exception of the Lethbridge jail no other work of this nature, either in the fall of 1935 or the spring of 1936, was attempted at the other establishments.

Publicity.—The necessity for exercising greater care with a view to the conservation of forest resources is a principle which is generally accepted by the public.

A healthier method of publicity, however, should be extended as soon as possible to oppose the regrettable form, unfortunately the principal kind in force at the present time, which arises through the medium of the press as a result of destructive fires.

FISHERIES

The exportation of marketable fish during the period under review showed a continuation of the improvement noticeable during the previous year. With careful attention to handling and packing the export market can unquestionably absorb available quantities of fish produced from Alberta lakes.

Angling during the year was reported in some districts to be excellent, though in certain accessible streams it was pronounced only fair on account of overfishing.

Commercial Production.—Commercial fishing for the year totalled 4,921,542 pounds, an increase of 862,106 pounds over last year. Valuation of the catch to fishermen was \$200,324.00, an increase of \$55,204.06, and valuation as marketed, \$287,726.00, an increase of \$43,655.23. Catches showed increases in whitefish, lake trout, pike, tullibee, sucker, ling, goldeye and mullet with decreases in pickerel and perch.

TOTAL AMOUNT OF FISH TAKEN FOR COMMERCIAL PURPOSES AND VALUATIONS

Fiscal Year	Weight (Lbs.)	Value to Fishermen	Value as Marketed
*1930-31	1,851,848	\$ 70,624.00	\$ 94,032.00
1931-32	3,337,980	115,928.10	189,927.88
1932-33	2,655,214	94,439.65	130,808.51
1933-34	3,566,356	131,124.35	200,755.24
1934-35	4,059,436	145,189.54	244,070.77
1935-36	4,921,542	200,394.00	287,726.00
TOTALS	20,392,376	\$757,699.64	\$1,147,320.40

Increases this year in comparison with last.....	862,106	\$ 55,204.46	\$ 43,655.23
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Domestic Fishing.—The issue of domestic licenses totalled 622, a decrease of 32 from last year.

Indian Fishing.—A decrease of 41 permits issued to Indians is shown in the total of 801 for the year.

Licenses and Permits.—Annual comparative statement for the fiscal years from 1930-31 to 1935-36 showing totals of licenses and permits issued is given in the section of this Report belonging to the Fisheries Division.

Angling.—Good fishing continued in the Bow, Elbow and Highwood rivers. Angling for Arctic grayling in the Macleod and Clearwater rivers was also favourably reported on and a satisfactory sporting season at Cold Lake was in evidence.

*Six months period

The experimental planting of Lock Leven trout in the Clearwater (Central Alberta) and Red Deer watersheds has proved successful, several of these species having been caught in these waters during the season under review.

TOTAL AMOUNT OF FISH TAKEN BY ANGLING

Fiscal Year	Game Fish	Other Fish	Total
	Trout, Rocky Mountain Whitefish and Arctic Grayling (Lbs.)	Goldeye, Pickerel, Perch and Pike (Lbs.)	(Lbs.)
*1930-31		1,225,000	1,225,000
1931-32	457,975	1,756,919	2,214,894
1932-33	422,638	1,260,034	1,682,672
1933-34	355,000	1,133,730	1,488,730
1934-35	420,589	977,214	1,397,803
1935-36	357,720	870,943	1,228,663
TOTALS	2,013,922	7,223,840	9,237,762
Decreases this year in comparison with last..	62,869	106,271	169,140

Loss of Fish and rescuing Fish.—Drought conditions as in the previous year were reported from several districts resulting in low water in many of the Foothills streams and consequent loss of fish.

The rescue of some 2,000 game fish from threatened districts and their transference to deeper waters was effected by Fisheries officers.

Predaceous Fish removed from Trout Waters.—A total of 6,222 predaceous fish—sucker, pike, ling and Dolly Varden trout—were removed from trout waters during the year.

SUMMARY OF CONFISCATIONS AND PROSECUTIONS RESULTING FROM INFRINGEMENTS OF THE FISHERIES REGULATIONS

Fiscal Year	Confiscations	Prosecutions
*1930-31	29	27
1931-32	40	68
1932-33	68	89
1933-34	53	62
1934-35	59	60
1935-36	126	66
TOTALS	375	372
Increases this year in comparison with last.....	67	6

FISH CULTURE—PLANTING OF GAME FISH FRY AND FINGERLINGS INTO PROVINCIAL WATERS OUTSIDE THE NATIONAL PARKS

Fiscal Year	Game Fish (Trout)	
	Number of Plantings	Number of Fry
*1930-31		
1931-32	157	2,236,500
1932-33	147	1,960,250
1933-34	168	2,180,850
1934-35	179	2,361,865
1935-36	186	2,555,986
TOTALS	837	11,295,451
Increases this year in comparison with last.....	7	194,121

Lesser Slave Lake Hatchery.—The Lesser Slave Lake hatchery, closed since May, 1933, was placed in operation again during the fall of 1935. A staff was engaged at the spawning camp at Whitefish River about October 1st for the purpose of collecting whitefish eggs for placing in the hatchery and planting in neighboring waters.

*Six months period

EXAMINATION AND STOCKING OF LAKES AND OTHER BODIES OF WATER

Fiscal Year	Lakes and other Bodies of Water examined regarding suitability for Stocking	Number found suitable	Number found unsuitable	Lakes and other Bodies of Water stocked during Season
*1930-31 .....	...	...	...	...
1931-32	37	30	7	4
1932-33	20	9	11	22
1933-34	30	17	13	2
1934-35	15	8	7	27
1935-36	23	9	14	4
TOTALS	125	73	52	59

REVENUE OBTAINED FROM FISHING LICENSES, PERMITS, SALES AND SUNDRIES

Fiscal Year	Revenue
*1930-31	\$ 4,849.29
1931-32	18,861.22
1932-33	14,739.60
1933-34	15,071.61
1934-35	18,947.76
1935-36	20,613.41
TOTAL	\$93,082.89
Increase this year in comparison with last	\$ 1,665.65

COAL

The output of coal produced from Alberta mines during the calendar year 1935 was 5,462,973 tons with a valuation of \$13,946,338.15, being an increase of 714,125 tons over the preceding year. In addition to this production 395 tons were mined by farmers under permit for their own use.

The production of coke for this period showed an increase of 3,725 tons and briquettes, 2,906 tons.

Disposition of Coal.—Coal sold for consumption in Alberta totalled 1,246,959 tons; sold for consumption in other Canadian provinces, 1,843,046 tons; sold for consumption in the United States, 24,712 tons; sold to railway companies, 1,960,555 tons; used for making briquettes, 17,490 tons; used for making coke, 98,233 tons; used under colliery boilers, 163,197 tons; used by colliery railways, 7,847 tons; put to stock, 68,868 tons; put to waste, 90, 014 tons. The above tonnages include the coal lifted from stock and waste heaps.

COAL PRODUCTION

Calendar Year	Tonnage	Valuation
*1930	5,755,911	\$19,379,000.00
1931	4,564,290	13,415,745.00
1932	4,870,030	13,441,193.00
1933	4,714,784	12,197,339.00
1934	4,748,848	12,440,616.53
1935	5,462,973	13,946,338.15
TOTALS	30,116,836	\$84,820,231.88
Increases this year in comparison with last	714,125	\$ 1,505,721.62

*Under federal administration prior to October 1st, 1930, and under provincial following that date

PRODUCTION OF COKE AND BRIQUETTES

Calendar Year	Coke (Tons)	Briquettes (Tons)
*1930 .....	.....	24,111
1931 .....	.....	15,102
1932	2,183	13,582
1933	49,279	16,104
1934	59,703	15,906
1935	63,428	18,812
TOTALS.....	174,593	103,617
Increases this year in comparison with last.....	3,725	2,906

Disposition of Electrical Power.—Electrical power used by Alberta coal-mines during the year totalled 23,111,373 k.w.hrs.†

ELECTRICAL POWER USED FOR OPERATION OF ALBERTA COAL-MINES

Calendar Year	K.w.hrs.†
*1930	25,003,606
1931	16,918,625
1932	14,875,890
1933	17,611,959
1934	19,447,621
1935	23,111,373
TOTAL	116,969,074
Increase this year in comparison with last.....	3,663,752

Royal Commissions.—The Royal Commission respecting the coal industry of the Province of Alberta, held during the year under the commissionership of the Right Hon. Sir Montague Barlow, Bart., P.C., K.B.E., LL.D., and the Coalhurst mining disaster which took place on December 9th, 1935,—leading to a Royal Commission conducting an Enquiry as to cause, held by the Hon. H. W. Lunney, Judge of the Supreme Court of Alberta, just after the close of the calendar year—made considerable demands on the time and services of the Mines Branch of this Department during the period under review.

SHALE AND CLAY MINED

During the calendar year 1935 four shale pits were in operation. The production from these pits totalled 20,258 tons of clay and shale from which 7,349,300 bricks were manufactured.

SHALE MINED—BRICKS AND TILES MANUFACTURED

Calendar Year	Shale Mined (Tons)	Bricks Manufactured (Number)	Tiles Manufactured (Tons)
*1930	67,517	22,007,045	.....
1931	23,855	7,091,080	2,825
1932	8,446	3,444,010	182
1933	3,234	1,221,060	.....
1934	13,561	4,398,032	1,171
1935	20,258	7,349,300	.....
TOTALS	136,871	45,510,527	4,178
	Increase	Increase	Decrease
This year in comparison with last.....	6,697	2,951,268	1,171

Mines Branch Annual Report.—Statistical information covering Alberta's coal-mining activities and production of shale and clay mined for the calendar year 1935 is given in complete detail in the published Annual Report of the Mines Branch, Department of Lands and Mines, for this period, which appears as a separate publication to this Report.

*Under federal administration prior to October 1st, 1930, and under provincial following that date
†K.w.hrs.—Kilowatt hours

BIRD SANCTUARIES AND PUBLIC SHOOTING GROUNDS

In conjunction with a representative of the Dominion Parks Branch an examination of a number of the bird sanctuaries and public shooting grounds of the Province was made during the summer of 1935 with a view to determining present suitability of these areas for this particular purpose and the cancellation of those now considered unsuitable, drought conditions of the last ten to fifteen years having greatly reduced the value of some of these reservations as water-fowl sanctuaries or shooting grounds.

Areas, recommended by various Fish and Game Associations to take the place of those recommended for cancellation, were examined.

REGULATIONS PERTAINING TO PLEASURE BOATS

The enforcement of regulations appertaining to the operation of pleasure boats was again carried out under the supervision of the Fisheries Division. All complaints regarding infractions of regulations were attended to by inspectors of the Division.

Individual detailed reports from the various Divisions of the Department follow.

Your obedient servant,

J. HARVIE,
Deputy Minister.

Edmonton, February 2nd, 1937.

Provincial Lands Administration

REPORT OF THE DIRECTOR OF LANDS, D. H. BOLES

The reorganization of the Department, made effective at the opening of the fiscal year under review, divided the administrative control of Alberta lands between this Division and the Divisions of Forestry, School Lands and Mining Lands, the last two being newly formed at the beginning of the year.

In the process of reorganization the Edmonton Land Agency was abolished with a view to eliminating the duplication of records, the area of the Edmonton Land District coming under the direct control of this Division.

With all matters pertaining to school lands, mining lands and timber on provincial lands in the Edmonton District being transferred to the Divisions already stated, the duties of this office represented a supervision as heretofore of the Calgary, Lethbridge and Peace River Land Agencies, the provincial sub-agencies, full time and part time, and all matters pertaining to provincial lands in the Edmonton Land District.

Provincial Land Agencies and Sub-Agencies.—The Land Agencies at Calgary, Lethbridge and Peace River continued as heretofore with the transmission of applications to the Administration Office in Edmonton and in maintaining service of a general nature to the public. Sub-agencies were also represented by the inspection staff who acted as sub-agents and were in attendance at various centres as follows:—6 locations, 1 day each week; 7 locations, 2 days each month; 30 locations, one day each month.

The following applications were received throughout the Province during the year:

Cancellation of homestead entries.....	805	Townsites	9
Cultivation leases	81	Miscellaneous leases	6
Grazing leases	441	Accrued area leases	264
Patents	2,173	Fur farming leases	1
Church sites	9	To lease surface rights	2
Cemetery sites	9	Licenses of occupation	6
School sites	55	Supplementary grants	8
To purchase provincial lands	49	Release of habendum clause	5

Homestead Entries.—Homestead entries for the year totalled 1,515 and Soldier Grants 13.

Applications for patent on hand at April 1st, 1935, added to those received during this fiscal year, totalled 4,919.

Other business transacted was as follows:

Leases issued:			
Accrued area	195	Surface rights	2
Cultivation	250	Townsites	9
Fur farm	5	Miscellaneous	5
Grazing	315	Licenses of occupation	6

Land Sales Granted.—Sales of provincial lands granted during the year totalled 90.

Permits Issued.—Grazing permits issued totalled 875 and hay, 645.

Accrued Area Leases Issued.—The total of accrued area leases is shown in the above statement as 195. This total covers an area of 22,030 acres. During the year 3 of these leases comprising 200 acres were cancelled leaving 192 covering 21,830 acres in force.

Accrued area leases are being issued to the holders of beneficial rights in adjoining lands, the main object in granting each lease being to assist in the destruction of noxious weeds.

Cultivation Leases Issued.—In the statement shown above cultivation leases issued for the year totalled 250. These covered an area of 43,656 acres. One lease of 160 acres was cancelled during this period leaving 249, comprising 43,496 acres, in force.

Cultivation leases call for delivery to the Department of a share of the crop or crops grown on the cultivated area. The Department's share is based on the location of the land and is arrived at as a result of a survey made for that purpose.

In order to assist lessees, the Department's share was reduced. Due to drought and climatic conditions returns have not been as substantial as anticipated.

Cancellations:			
Homestead and soldier grant entries	1,725	Provincial lands' sales	91
Grazing leases	462	Miscellaneous leases	6
GRAZING			
	Number of Ranches	Acreage under Lease	
Dominion leases in force, April 1st, 1935	2,839		2,707,892
Cancelled	175	118,581	
Cancelled and amalgamated in new leases	131	138,835	
Cancelled and renewed in new leases	159	46,837	
	465		304,253
Active dominion leases, March 31st, 1936	2,374		2,403,639
Provincial leases in force, April 1st, 1935	541		370,554
63 Dominion leases and 29 applications amalga-			
mated	29	139,261	
3 Dominion leases and 3 applications renewed	3	1,141	
and amalgamated			
41 Dominion leases renewed and amalgamated with	36	25,881	
54 dominion leases and 3 provincial leases			
7 Dominion leases renewed and amalgamated with	6	22,034	
13 dominion leases and 6 applications			
1 Dominion lease and 1 provincial lease amal-			
gamated	1	396	
1 Provincial lease and 1 application	1	641	
108 Dominion leases renewed	96	29,544	
140 Applications	140	87,449	
3 Partial Assignments	3	1,120	
	315		307,467
Active provincial leases, March 31st, 1936	856		678,021

Notifications Issued.—An itemized statement of notifications issued and acreage covered thereby is given in the Technical Division's section of this Report.

Land Inspections:	
Outstanding, April 1st, 1935	1,163
Reports called for during the year	1,561
	2,724
Reports received during the year	1,576
Outstanding, March 31, 1936	1,148

Office Transactions.—Office transactions during the year were as follows:

Total letters received	95,274	Number of stencils cut	302
Daily average received	345.80	Number of pages mimeographed	76,494
Total letters mailed	126,126	Number of translations made for	
Daily average mailed	425.77	this and other departments	391
Assignments recorded	84	New files made	10,336

Due to the closing of the Edmonton Land Agency it was necessary to amalgamate the files and registers of that office with those of the Administration Office.

Provincial Grazing Reserve.—The lands in township 1, range 19, west of the 4th meridian have been placed in a reserve for community grazing with a caretaker in charge.

The reserve has been fenced, has an ample supply of water and has been grazed to the limit of 500 head of stock (horses and cattle).

It was originally intended to confine the season from May 15th to October 31st, but owing to the lack of feed, the grazing of a limited number of stock during the winter was permitted.

Macleod R.C.M.P. Reserve.—The lands comprising the R.C.M.P. reserve at Macleod, have by order in council been transferred from the Department of the Interior, Ottawa to the Province for administration purposes.

A survey of the property is being made in order to determine what disposition should be made of the lands and improvements.

Flooded Area.—Regulations have been established whereby settlers who have suffered hardship from extreme flood conditions in the northern part of the Province may exchange areas of land affected for lands in a location where an adequate return for their labour seems more assured.

Provincial Parks.—Lands being found suitable for parks or recreation purposes, more especially locations on lakes or rivers which may later be required by settlers for bathing or camping purposes, are being placed under reservation. A total of 1,760 acres was recently turned over to The Provincial Parks Board for inclusion in the Saskatoon Mountain Park.

Coutts Quarantine Reserve.—Negotiations are now under way for the transfer of lands in the Coutts Quarantine Reserve from the Department of the Interior, Ottawa to the Province of Alberta for administration purposes.

REPORT OF THE SUPERVISOR OF GRAZING, G. A. FORSTER

Owing to the vacancy caused in the Grazing Branch of this Department by the death on August 9th, 1934 of Albert Helmer, Supervisor, and to the fact that no appointment to fill the vacancy was made until the following fiscal year now under review, no inspections were made during this eight month period with the result that a number of applications were outstanding at the close of the fiscal year ending March 31st, 1935.

With a view to making these inspections as speedily as possible, the services of H. S. McCowan, Homestead Inspector, were loaned to this Branch for a period of approximately four months. P. J. Biddell, Assistant Supervisor, also contributed to this work until September 5th when by special request his services were transferred to the Department of Agriculture as a brand-reader at Moose Jaw, Saskatchewan. The services of G. H. Cloakey were also secured by this Branch for inspection work for a three month period prior to his assignment to special investigations dealing mainly with grazing in the forest reserves. With this assistance 585 inspections were made during the period of this report.

Weather and road conditions throughout a large portion of the winter made field work impossible. During this time a careful study of all applications was made, with plans and maps being prepared for inspection work during the coming spring and summer, when it was expected that all applications still outstanding would be inspected and duly reported upon.

The results of the inspections during the year revealed the fact that nowhere is there any great area of grass with an available water supply that is not utilized. Overgrazing has been the practice on many ranges and is accounted for, specially in the southern part of the Province, by drought and not because

stockmen have been attempting to pasture more stock than usual. With less rainfall there was obviously less pasturage. Overgrazing is more noticeable where the land has been grazed by sheep, a detrimental factor which, if continued, will require controlling. The majority of stockmen recognize this danger and are anxious to co-operate in preventing damage of this nature from materializing.

The present regulations, requiring the lessee to maintain one head of stock for each thirty acres under lease, are no longer practical especially in that part of the Province where drought has prevailed for the past several years. An amendment to these regulations authorizing the Supervisor to impose restrictions where deemed necessary regarding the number of stock to be pastured on a leasehold is now desirable.

This is recommended not only in the interests of the livestock industry's survival but also for the general protection of grass. At the present time the livestock industry, as far as cattle are concerned, is regarded as a hazardous occupation which now depends solely upon exceptionally favourable circumstances and good management to save it from financial disaster.

Owing to the continued low prices received for cattle, the ranchers contend that they are unable to meet operating expenses and pay taxes and rentals in full. Drought conditions have forced them to reduce the numbers of stock carried on their leaseholds, and many, who in the past have made a practice of reserving portions of their leaseholds for winter pasture, have been obliged to use these reservations during the fall. Consequently they have been put to additional expense to provide feed during the winter.

The continuance of this practice, namely that of using the entire leasehold during the summer and fall months without any reserve pasture for the winter, can only result in severe losses of livestock should a hard winter follow.

Taking into consideration the above adverse conditions existing today in the livestock industry of Alberta, it is imperative that the supervision of grazing be exercised to a greater extent than ever. The alternative is a sinister one which involves the probability of Alberta grass lands becoming completely overgrazed and developing into a desert.

The construction of stock-watering dams and dug-outs for the development of a water supply is receiving engineering and financial assistance under the Prairie Farm Rehabilitation Act in connection with which Mr. John Vallance is Senior Rehabilitation Officer at Regina, Saskatchewan.

On many of the ranges where watering places are too far apart, it would be advisable to apply for this assistance. It is apparent that under these conditions stock, which are required to travel too great a distance to and from water to grass, do not put on flesh. Under these circumstances lands adjacent to such watering places become very much overgrazed resulting in the carrying capacity being less than if a greater number of watering places were available.

Grass without an adequate water supply cannot be utilized advantageously except in the winter when there is snow on the ground and horses can be pastured or in the early part of the summer if the spring run-off provides a supply in the sloughs. In order to make use of these areas at such times, additional fencing often becomes necessary, an adverse factor which adds to the cost of operation.

Free public grazing (which is uncontrolled pasturing) has proved itself to be generally detrimental. Areas set aside for this purpose are mostly overgrazed resulting in very little benefit to owners whose stock become unfit for ad-

vantageous marketing. Revenue also is lost to the government which might otherwise have been derived had the lands been under lease.

During the year an experiment in controlled pasturing has been in operation in township 1, range 19, west of the 4th meridian. Uncontrolled public grazing had been permitted on this township for at least two years previous to this experiment being started and as a result it was completely grazed off.

This township is well watered, the Milk River running diagonally across it from the south-west to the north-east. In addition to this there is a flowing well in the south-east half. The township is well fenced and was created a government grazing reserve for the purpose of pasturing surplus stock of the resident farmers in the adjoining district. It was gazetted a pound. Applications were received, permits issued and a fee of 35c per month per animal was charged.

The number of stock for which permits were issued was restricted to four head per quarter section so as to give surplus grass an opportunity to grow. In spite of a dry summer this was accomplished.

An inspection of the township in December revealed more grass than there had been in the previous May. For this reason numerous requests were received from nearby ranchers, whose own pastures had become badly depleted, for permits to graze their stock in that area during the winter.

Petitions have also been received by the Department for the establishment of an additional township to be used for the purpose of a government grazing reserve, the petitioners favouring this policy to that of forming a community grazing association and leasing the land.

Applications and reports for the fiscal year ended March 31st, 1936, were as follows:

Number of requests to inspect applications	208
Number of requests to inspect renewal applications	26
Number of special reports requested	12
Number of requests to inspect stock watering reserves	6
Number of requests to inspect public grazing reserves	2
	<hr/>
	254
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Number of applications reported on	365
Number of renewal applications reported on	186
Number of special reports made	27
Number of stock watering reserves reported on	6
Number of public grazing reserves reported on	1
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	585
	<hr/>

School Lands Administration

REPORT OF THE SUPERINTENDENT OF SCHOOL LANDS,
J. W. STAFFORD

For the reason that the following report dealing with school lands administration represents the first general report submitted on this particular subject since the transfer of the natural resources to provincial control, it is considered advisable to briefly set forth the purpose of this administration.

School lands comprise sections 11 and 29 in each surveyed township, together with such additional lands as may from time to time be designated school land, and in the aggregate they total approximately one-eighteenth of the surveyed area within the Province.

School Endowment Fund.—These lands were set aside by act of parliament to establish an endowment which would provide moneys for the purpose of education. It will, therefore, be readily observed that the lands are not administered on a colonization basis, but for the purpose of deriving as great a revenue as possible for the benefit of the School Endowment Fund.

All moneys realized as principal from the sale of school lands are invested in securities of Canada to form an Endowment Fund, and the interest accruing therefrom, together with all moneys received as payment on account of interest on sales, as well as miscellaneous revenues from timber, hay, grazing, mining, etc., are used for the support of organized schools. The Endowment Fund, therefore, remains intact and increases annually to the extent of principal moneys transferred thereto.

By the terms of The Natural Resources Agreement with this Province, the administration of school lands was transferred to Alberta. It was subject, however, to the provision that these lands shall continue to be administered by the Province in accordance with the provisions of sections 37 to 40 of the Dominion Lands Act for the support of schools organized and carried on therein in accordance with the law of the Province.

The terms and conditions of all sales are statutory, but the disposal of timber, hay, grazing, cultivation and other privileges is governed by regulations established under various orders in council.

Auction Sales.—No general auction sales have been held since the transfer of the natural resources, but in a few cases auction sales have been held for individual parcels. The total area sold by this method is 338.25 acres, realizing \$2,469.30, an average of \$7.30 per acre.

During the past three years a large number of purchasers voluntarily surrendered lands which they had acquired by purchase owing to the fact that they were not in a position to carry out the terms and conditions of the sales. In the majority of cases where a purchaser had improved the land by way of the erection of buildings or cultivation, such purchaser was granted prior right to obtain a cultivation and grazing permit and these permits were subsequently embodied in cultivation and grazing leases. A total acreage of 215,439.6 is now held under these leases. Ten cultivation and grazing leases, comprising an area of 1,595.91 acres, were cancelled during this period.

Sales in Force.—On the 1st of October, 1930, when the natural resources were transferred to this Province, there were 4,365 open sales transferred, comprising an area of 676,828.24 acres of a value of \$10,551,009.23.

Between the 1st of October, 1930 and the 31st March, 1936, 2,069 sales were cancelled, comprising an area of 321,726.78 acres of a value of \$5,346,435.51. In this period 296 sales, covering 22,267.12 acres of a value of \$364,156.47, were paid in full. At the end of this period there were sales in force to the number of 2,167 comprising 333,710.02 acres of a value of \$4,848,410.89.

Revenue.—The total net revenue received during this fiscal year was \$254,142.49, which compares with a revenue of \$407,919.79 for the previous fiscal year. This reduction is partly accounted for by the cancellation of numerous sales and by crop failure last year in districts in which many of the present sales are located. It is also accounted for by the fact that numerous purchasers have stated that it is not their intention to make further payments on sales until such time as they receive a reduction, or compromise, on the purchase price agreed to be paid under the terms and conditions of the sale. Classification of these revenues will be found in the section of this Report belonging to the Accounting Division.

Amendment to the Provincial Lands Act.—At the 1935 session of the Provincial Legislature, section 44 of The Provincial Lands Act was amended empowering the Minister—

- (a) to give effect to any compromise, adjustment or arrangement made pursuant to *The Farmers' Creditors Arrangement Act*, 1934, in respect of any agreement for the sale of school lands or of any sum payable under any such agreement on account of principal and interest on either of them; and
- (b) to reinstate upon such terms and conditions as to him seem proper any such agreements as have been cancelled at any time since the thirtieth day of September, 1930, and before the 1st day of April, 1935, and upon so doing to adjust and compromise the sums outstanding whether for principal or interest under the cancelled agreement and to enter into a new agreement in lieu of the cancelled agreement upon such terms and conditions as to the amounts payable for principal and interest, the instalments in which payments are to be made and such other terms and conditions as may be prescribed from time to time by the Lieutenant-Governor in Council.

These amendments were to become effective upon proclamation of the Lieutenant-Governor in Council. This legislation, however, required to be implemented by legislation passed by the Federal Parliament as an amendment to The Dominion Lands Act, but during the period covered by this Report the necessary enabling legislation was not passed. No action, therefore, could be taken in so far as the amendments referred to herein were concerned.

Timber and Hay.—In connection with timbering operations, 23 berths were disposed of by sale from which 3,449,915, F.B.M.* of lumber and 30,052 railway ties were manufactured. Timber permits issued during the year totalled 336 producing 1,914,215, F.B.M.* of lumber and 4,240 railway ties. Timber seizures numbered 29 covering 133,151 F.B.M.* of lumber and 609 railway ties.

Hay permits were issued to the number of 361 and 2,587 tons of hay cut under authority of same.

In addition to maintaining a complete set of land records and a thorough filing system in this Division, the following further transactions were carried out in connection with the administration of school lands:

Assignments registered	66	Hay permits issued	361
Cultivation and grazing leases issued....	1,135	Timber permits issued	336
Cultivation and grazing leases cancelled ..	10	Timber seizures	29
Grazing permits issued	2,536	Letters despatched	33,043

*F.B.M.—Feet, board measure

Mining Lands Administration

REPORT OF THE SUPERINTENDENT OF MINING LANDS, J. W. HAMILTON

The Mining Lands Division was established as an additional unit to the Department of Lands and Mines on April 1st, 1935. It is charged with the administration of regulations governing the disposal of mineral rights, solid, liquid or gaseous, which are the property of the Crown in provincial and school lands. The Division also carries out the duties of Mining Recorder for the Edmonton District.

All mining land leases, petroleum and natural gas prospecting permits and special permits are prepared and issued by the Division. Applications are received at this office and at the offices of the different provincial land agencies, the latter forwarding same to this Division for approval and further action. In connection with this work complete sets of township plans and registers are kept up to date.

The following is a list of leases dealt with from October 1st, 1930, date of the transfer of the natural resources to the Province of Alberta, to March 31st, 1936:

	Active at date of transfer	Issued	Divided	Cancelled	Renewed	Active at March 31st, 1936
Petroleum and natural gas, provincial lands.....	16,899	1,825	58	15,541	82	3,159
Petroleum and natural gas, school lands.....	1,964	204	....	1,907	1	260
Petroleum and natural gas, Crown reserve.....	5	19	....	6	....	18
Coal, provincial lands	620	248	1	389	84	396
Coal, school lands	60	20	....	39	5	36
Quarrying	45	....	....	23	....	22
Quartz mining	4	....	....	....	....	4
Salt and gypsum	1	....	....	1	....	....
Tar sands	3	....	1	1	....	2
Miscellaneous	1	....	....	....	....	1
Dredging	32	4	....	28	....	8
TOTALS.....	19,634	2,320	59	17,935	172	3,906

ACREAGE CONTAINED IN ABOVE LEASES

Petroleum and natural gas, provincial lands	2,263,076	364,660	2,016,723	11,597	599,417
Petroleum and natural gas, school lands	191,726	34,644	183,886	420	42,064
Petroleum and natural gas, Crown reserve.....	6,160	22,401	5,601	....	22,960
Coal, provincial lands	236,984	100,512	155,323	68,777	113,396
Coal, school lands	9,570	1,642	4,581	826	5,805
Quarrying	1,675	....	552	....	1,123
Quartz mining	182	....	....	....	182
Salt and gypsum	200	....	200	....	....
Tar sands	3,737	....	1,825	....	1,912
Miscellaneous	3,560	....	....	....	3,560
TOTALS.....	2,716,870	523,859	2,368,691	81,620	790,419
Dredging (in miles)	145	12	125	....	32

STATEMENT OF BUSINESS TRANSACTED, 1935-36

PETROLEUM AND NATURAL GAS

	Number	Acres
Petroleum and natural gas leases issued on provincial lands	643	64,702.42
Petroleum and natural gas leases issued on school lands	74	6,880.90
Petroleum and natural gas leases issued under Crown reserve regulations ..	6	3,200
Petroleum and natural gas leases cancelled and relinquished on provincial lands	853	259,516.02
Petroleum and natural gas leases cancelled and relinquished on school lands ..	106	18,053.14
Permits to prospect issued	50	232,738
Fees and rentals collected		\$115,543.40
Royalties collected		117,468.36
Total.....		\$233,011.76

DEPARTMENT OF LANDS AND MINES

COAL

	Number	Acres
Coal leases issued on provincial lands.....	20	1,361.65
Coal leases issued on school lands.....	5	218.68
Coal leases cancelled and relinquished on provincial lands.....	73	31,152.82
Coal leases cancelled and relinquished on school lands.....	12	703.82
Fees and rentals collected	\$117,741.55	
Royalties collected	186,691.23	
Total.....	\$304,432.78	

MISCELLANEOUS

	Number	Acres
Permit to prospect for salt	1	6,721.68
Permits to collect bitumen	2	.....
Permit to remove glauber salts	1	22.5
Leases to dredge in river beds	4	12 miles

STATEMENT OF BUSINESS TRANSACTED WITHIN THE EDMONTON DISTRICT 1935-36

	Number	Acres
Applications for petroleum and natural gas leases.....	12	1,600
Applications for petroleum and natural gas permits to prospect.....	3	65,151
Applications for coal-mining leases	14	620
Applications for dredging leases	2	10 miles
Applications for quarrying leases	11	.....
Domestic coal permits issued	11	.....
Quartz mining claims granted	16	.....
Quartz mining certificates of work issued	7	.....
Quartz mining certificates of partnership issued	1	.....
Placer claims granted	7	.....
Bar-digging permits issued	1	.....
Sand, stone and gravel permits issued	9	.....
Fees and rentals collected	\$5,451.10	
Royalties collected	209.00	
Total.....	\$5,660.10	

All mineral rights are disposed of by lease, grant or permit for a limited period of time and are not sold. Revenue is derived from fees, rentals, bonuses, royalties and dues.

PETROLEUM AND NATURAL GAS

Development of Leases.—Under the petroleum and natural gas regulations expenditures incurred in actual development of an area acquired under lease may be accepted in satisfaction of rentals, which should otherwise be paid in cash. Under this provision, rentals due to the amount of \$487,832.50 were satisfied by such expenditures, and so reduced the revenue of the Division to that extent. The total rental revenue in cash together with expenditures accepted in lieu of rental of petroleum and natural gas rights amounted to \$599,140.90 for the year.

Disposal by Public Tender.—The regulations provide for the disposal by public tender of petroleum and natural gas rights in areas comprising cancelled leases and this method of disposal has resulted in payment to the Department of the sum of \$864.25 as bonus during the year.

Number and Area of Leases.—On October 1st, 1930 18,868 leases were transferred to provincial administration comprising 2,460,962.48 acres. Since that date 2,048 leases comprising 421,604.96 acres have been issued by the Alberta Government.

During the year under review 723 leases were issued, comprising 74,783.32 acres, bringing the total number now in force to 3,437, which cover an area of 664,440.76 acres.

Prospecting Permits.—Regulations governing the issue of permits to prospect were amended by an order in council which became effective in January, 1936, and which resulted in great activity in the receipt of applications. Under the

new regulations 10 permits to prospect, comprising 226,068.83 acres, were issued. These, added to the 44 permits covering an acreage of 14,367.50, previously in force, made a total at the end of the year of 54 permits comprising an area of 240,436.33 acres.

COAL

All coal rights are now disposed of under terminable leases at an annual rental of \$1.00 per acre and subject to a royalty of 5c per short ton on production.

Leases Issued.—During the year the following coal-mining leases were issued:

	Number	Acres
Provincial lands	20	1,361.65
School lands	5	218.68
Total	25	1,580.33

The total number of coal-mining leases in force at the end of the fiscal year was 433, comprising 119,280.73 acres. During the year, 3,867,139 tons of coal, subject to royalty, were mined, as compared with 3,233,589 tons of royalty-bearing coal mined in the previous fiscal year.

Coal for Domestic Use.—Permits to mine coal for domestic purposes only totalled 29 for the year. A fee of \$1.00 is charged for a permit of this nature with royalties based at 10c per ton. The maximum area of such a permit, which terminates on the 31st of March in each year, is one acre. The amount of coal extracted under these permits for the year was 534 tons.

Requirements for New Leases.—The locations of coal-mining leases as shown on all applications are inspected and reported upon. New leases are granted only if required for the continuation of existing operations or in the few instances where the locality in which the area applied for is so situated that it cannot be supplied economically from an existing mine.

The following statement shows the amounts which have been collected on account of royalty on coal mined from lands in the Province of Alberta during the past 29 years:

Fiscal Year	Royalty Paid	Fiscal Year	Royalty Paid
1907-1908	\$ 7,621.67	1923-1924	210,389.53
1908-1909	5,322.39	1924-1925	148,979.10
1909-1910	153,559.98	1925-1926	188,277.94
1910-1911	218,932.88	1926-1927	218,150.10
1911-1912	104,894.55	1927-1928	231,757.96
1912-1913	142,997.79	1928-1929	254,616.27
1913-1914	147,198.75	1929-1930	248,083.71
1914-1915	104,489.77	1930-1931*	105,126.51
1915-1916	67,190.17	1931-1932	145,170.33
1916-1917	149,447.82	1932-1933	143,800.01
1917-1918	144,634.75	1933-1934	193,527.82
1918-1919	175,687.66	1934-1935	176,122.43
1919-1920	181,641.80	1935-1936	186,691.23
1920-1921	190,545.80		
1921-1922	185,436.88	Total	\$4,531,729.43
1922-1923	171,723.83		

*Under federal administration prior to October 1st, 1930, and under provincial following that date

BITUMINOUS SANDS

Applications for a location under the bituminous sand regulations can be considered only if the applicant has submitted satisfactory evidence that he has the right to use a process for the recovery of oil or other hydrocarbons from such sands, such process, in the opinion of the Minister, giving promise of developing a successful industry. On compliance with this stipulation the applicant may be granted a permit to proceed with development. After the process of extraction has been proven and established, a terminable lease may be granted.

At the close of the year one permit, comprising 9,718 acres, and 2 leases, covering 1,912 acres, were in force.

An area approximating 15,000 square miles has been reserved in the general area of McMurray for the purpose of bituminous sand development. This area possesses only a light overburden and is considered to be of the greatest richness.

QUARTZ MINING

Quartz mining claims are granted subject to an annual expenditure for development work. When this work has progressed sufficiently and the claim has been properly surveyed, a lease is issued for a period of twenty-one years, the products recovered being subject to payment of royalty.

During the year, 16 quartz mining claims were recorded. There are now in force 4 quartz mining leases comprising an area of 181.8 acres.

QUARRYING

Quarrying leases on Crown lands are issued under the regulations for limestone, granite, slate, marble, gypsum, marl, gravel, sand, clay, volcanic ash or any building stone.

At the close of the year a total of 22 such leases, covering an area of 1,123.54 acres, were in operation.

DREDGING

Eight leases to dredge for minerals in the beds of rivers were active during this period. These leases comprise portions of the beds of the McLeod and Athabaska rivers and cover a total river stretch of 32 miles.

SALT

Regulations have been made for the issue of permits to explore and prospect for salt, the property of the Crown. They have also been made for the disposal of salt rights, the product to be recovered by the usual process of drilling and which may not be secured by mining.

One permit to prospect, comprising 6,721 acres, was issued during the year, and is still in force.

SPECIAL PERMITS

Under this heading a special permit was issued for the removal of glauber salts which occurred in a comparatively pure condition and with a natural accumulation in certain sloughs and shallow lakes.

Two special permits were granted for the collecting of bitumen issuing from two northern wells. The rights were disposed of by public tender to the tenderer offering the highest royalty.

During the year a large number of requests for information on the Province's natural resources and questions dealing with problems associated with their development were received. These could not be adequately answered by printed reports, maps and other published material, considerable investigation being frequently necessary for the attention of individual cases.

Technical Division

REPORT OF THE SUPERINTENDENT OF THE TECHNICAL DIVISION, T. W. DALKIN

Notifications (*Land Patents*).—The outstanding feature of the fiscal year ending March 31st, 1936 was the number of legal descriptions prepared for notifications (land patents), with the result that the largest total area of land was patented since the transfer of the natural resources to the Province. The number of notifications issued was 2,965, covering a total area of 433,529.126 acres, together with 83½ subdivision lots in townships. By way of comparison 2,006 notifications comprising an area of 324,611.398 acres and 90 subdivision lots were issued during the previous year.

The various school boards were most active during the year in making applications for notifications covering school sites, due to the fact that the regulations were amended on January 2nd, 1935 by Order in Council, No. 14/35, whereby such notifications could be procured free of charge. Previously the policy adopted by the Dominion Government was followed whereby lands for school sites were disposed of at the rate of \$10.00 per acre. As numerous complaints were received from the school boards, expressing inability to pay due to the economic situation, it was deemed advisable to make arrangements for the passing of the Order in Council above referred to.

Several applications held in abeyance from the Canadian Pacific Railway Company for rights of way were disposed of under the Deputy Minister's new ruling of the 31st of August, 1935, wherein the usual \$10.00 notification fees were waived when the Company was entitled to free grants for rights of way.

Five of the notifications covered releases of habendum clauses.

Hereunder are set out in detail the nature of the grants and the numbers and areas of same:

Nature of Grant	Notifications	Area (acres)
Homesteads	1,597	250,629.72
Second homesteads	964	150,874.666
Soldier grants	139	21,742.25
School lands sales	74	5,986.81
Sales (including lots in subdivisions)	93	2,121.547
Special grants	87	728.463
Pre-emptions	6	959.00
Exchange of lands	1	315.00
Purchased homesteads	1	160.00
Canadian Pacific Railway	3	11.67
Total	2,965	433,529.126

Details of Sales in Subdivisions	Notifications	No. of Lots
Canmore	19	19
Walsh	5	10
Jarvie	2	3
Manyberries	1	1
Coleman	1	1
Seven Persons	1	2
Maple Leaf (7242 A.I.)	1	2
Maple Leaf (6224 Y)	1	1
Lethbridge (950 AQ)	1	½
Subdivision in n.w. of section 10, township 24, range 1, west of the 5th meridian (3940 L)	1	....
Glenbow (5712 A.B.)	1	43
McMurray (616 A.O.)	1	1
		83½

Homestead Entries.—During the year 1,329 homestead entries, 186 second homestead entries and 13 soldier grants were checked in as far as the areas

were concerned. In some cases such areas were affected by railway rights of way, roadways, power transmission lines, pipe-lines, and other previously alienated parcels of land. When these homestead entries and soldier grants were affected by rivers the fordableness of such rivers were investigated in order that entries where possible could be granted to the land in the quarter sections lying on both sides of the rivers.

Revested Soldier Settlement Board Lands.—Only a small area of land under this heading was revested in the Province as revealed by the following figures: Privy Council, No. 157, January 21, 1936, area—160 acres, Privy Council, No. 592, March 12th, 1936, area—797 acres.

Tax Recovery Lands.—No tax recovery lands were transferred this year from the Department of Municipal Affairs for administration by this Department. It might be mentioned, however, that three complete sets of township plans showing all tax recovery lands in subdivisions transferred to this Department were prepared for the Provincial Land Agencies and for general office use.

Roadways.—Forty plans were filed by the Department of Public Works with this Division affecting 160 parcels of Crown land. Some of these surveys affected lands alienated by sales, etc., and in such cases quit claims were obtained for the payment of compensation exacted. In order to permit of the filing of these plans of new roadway surveys it was necessary in some cases to abandon the old roadways previously surveyed.

One of these plans covers the revision of the provincial highway between the south boundary of Elk Island Park and the north boundary of the Cooking Lake Forest Reserve. As the Park is under the jurisdiction of the Dominion Government and the Reserve is under the Provincial Government, it is necessary that certain areas be selected from the Dominion to be transferred to the Province and added to the Reserve. In exchange, several areas are to be transferred from the Reserve to the Dominion to be included in the limits of the National Park. The readjustment of these boundaries is now proceeding.

Railways.—In order to complete the railway right of way records, the balance of the railway plans was received from Ottawa and duly recorded and indexed upon the maps of this Department. Other railway rights of way plans were received direct from the railway companies and filed. Included with such plans were applications for bridge sites over the Bow River, the Kananaskis River and the Red Deer River.

A copy of the Board Order was received from the Board of Railway Commissioners dealing with the abandonment of operations of the Canadian National Railways' right of way between Peace River Junction (Mile 31) and Darson Junction (Mile 63.6), a distance of 32.6 miles.

Transmission Lines.—Applications for licenses of occupation were received from and granted to the Calgary Power Company, Limited and the Canadian Utilities, Limited, covering power transmission lines.

Miscellaneous.—Several applications were received for licenses of occupation covering pipe-lines, logging roads, gas beacon sites (Minister of National Defence) and leases for reservoir sites.

Applications were received from the Department of Railways and Telephones for the issuance of orders in council to protect telephone leads to the Department due to the relocation of certain roadways. Applications were also received from religious sources, service groups, etc. for the leasing of lands around the shores

of Pigeon Lake with the result that a lease was issued in favour of the Synod of the Diocese of Edmonton.

Grazing.—A large number of outstanding grazing applications was dealt with and legal descriptions were prepared for approximately 350. Legal metes and bounds descriptions totalling 290 were prepared for cultivation and grazing leases and approximately 44 for lands belonging to the School Lands Endowment Fund. During this year the Department began issuing leases on lands given up by the recession of waters of lakes with the result that 260 such descriptions were prepared.

New Surveys.—Owing to the location of several squatters and the demand for further homestead land, instructions were forwarded to the Director of Surveys for the subdividing of the following lands: west half of township 69, range 6, west of the 6th meridian; part of township 70, range 6, west of the 6th meridian; part of township 76, range 12, west of the 6th meridian and part of township 76, range 13, west of the 6th meridian.

For a great many years the Dominion Government has been dealing with a squatter situation consisting of many families located on unsubdivided lands belonging to the School Lands Endowment Fund at McLennan. A request was made for a plan showing the location of these homes, which plan is now on file in this Division.

A resurvey was also made of the north-west quarter of section 72, township 76, range 18, west of the 5th meridian, approved on the 5th of December, 1935. New plans covering surveys executed by the Dominion Government were released during the year and covered the twenty-fifth base line across ranges 15, 16, 17 and 18, west of the 5th meridian, and the twenty-sixth base line across ranges 15, 16, 17 and 18, west of the 5th meridian.

New Maps.—A new map was issued of the Edmonton Land District, scale twelve and one-half miles to the inch. Copies of this issue totalled 4,000 and were received from Ottawa where it was published in collaboration with the Surveyor-General. Another new map of the Province, scale thirty-five miles to the inch, was also issued showing the highways. This map was published by the Surveyor-General in conjunction with this Division and 5,000 copies were received.

Owing to the general demand it was found necessary to re-issue the map of the Province, seventeen and one-half miles to the inch, published by Messrs. Bulman Brothers, Winnipeg. A commitment was put through at the end of the fiscal year for 3,000 copies of this map, 1,000 copies to be lithographed in black and blue, and 2,000 copies showing additional information regarding the highways.

There has been a particularly heavy demand for the seventeen and one-half mile map with the result that it has been found necessary to look forward to still another reissue at an early date. Work is at present proceeding in order to bring the next publication of this map up to date in as far as new towns, post offices, railways and abandonments of same are concerned.

In connection with the issuance of new maps it is interesting to note that the Surveyor-General at Ottawa has now in course of preparation a map of the Province of Alberta, scale sixteen miles to the inch. It is understood that it is the intention to issue this in two sheets, the southern one to be given prior attention. A similar scale map will be made available by the Dominion Government covering Saskatchewan and Manitoba.

Geographical and Topographical Maps.—Mainly due to the mining and oil activity, there is an increasing demand from the public for these maps.

Soil Survey Maps.—The preliminary soil survey of the Peace River, High Prairie and Sturgeon Lake areas, published by the University of Alberta, was received and indexed on the soil classification map.

Geological Records.—Various sets of maps and reports issued by the Dominion Bureau of Geology and Topography, Department of Mines and Resources, are now on file in this Division. These, in addition to the reports and maps issued by the Research Council of the University of Alberta, make a very comprehensive set of geological records.

Chipewyan Indian Reserve.—Representations have been made to this Department by the Department of Indian Affairs at Ottawa for 52,398.20 acres, more or less, of provincial lands which are required for Indian Reserves for the use of the Chipewyan band of Indians at Fort Chipewyan. Plans of these areas have been received and recorded in this Division, and it is believed that these representations on behalf of the Indians will be favourably considered, thus necessitating the preparation of a memorandum to the Executive Council requesting the issuance of an Order confirming the areas in question as Indian Reserves.

Writing-on-Stone (Provincial Park).—For some considerable time there has been an agitation for the dedication for park purposes of a certain area in sections 35 and 36, township 1, range 13, west of the 4th meridian, containing 795.80 acres, more or less, with the result that on the 31st of August, 1935 an Order in Council was passed, No. 1018/35, transferring the control of this area to the Provincial Parks Board.

Transfer of Lands from Ottawa.—Correspondence is still being carried on with the Dominion Government regarding certain areas to be transferred from the Dominion to the Province, and in this connection it is noted on the 13th of March, 1936 P.C. No. 613 was passed by the Dominion Government transferring the former Mounted Police Reserve at Macleod to the Province. As the Dominion Government wishes to retain certain interests at this point, satisfactory arrangements are being made.

Forestry.—The nucleus of a set of forestry records was prepared for the Calgary Forestry Office showing topography of the timber berths and grazing leases. A considerable amount of data has been gathered by the forest rangers for the forest reconnaissance records which have been compiled in this Division showing the types, quality and quantity of timber. Many maps have been prepared of the Crowsnest and Bow River Forest Reserves and lands immediately adjoining, showing the ranges and alienation of the lands in order to permit an investigation of the grazing records in these areas.

General.—An unusual amount of drafting and mathematical computations was executed during the past year. Of interest in this class of work were the various maps, charts and graphs prepared for the Attorney-General's Department, necessitated by the oil investigation undertaken by Mr. Frawley, solicitor of that Department. In addition to undertaking the drafting for all the Divisions and Land Agencies of this Department and the general public, assistance was given where possible in co-operating with certain other Departments in supplying maps, sketches and plans covering a variety of subjects.

Petroleum and Natural Gas

REPORT OF THE DIRECTOR OF PETROLEUM AND NATURAL GAS, C. W. DINGMAN

Interest regarding the development of Alberta's petroleum and natural gas resources showed a considerable increase during the fiscal year under review.

Exploratory drilling in unproven areas was carried out on a larger scale and evidence, obtained from the production of wells on the west flank of Turner Valley, renewed the interest in that area to a considerable extent. Wells drilling at the end of the year were being watched very carefully with a decided confidence that an area producing much more oil per volume of gas would be opened up.

With this return of activity it is quite evident that if the wells now drilling in this area are successful in encountering production many wells will be drilled and the search for oil in Alberta will receive a considerable impetus.

Amendments to the regulations under which leases on provincial lands are held, assisted materially in the renewal of this interest. An important change was in the regulation setting out the expenditures allowable in lieu of rentals. Another was a clause providing for the unitization of royalties over an area unitized in other respects by the owners or lessees.

The first large unitization scheme completed in Alberta was that upon which a site had been chosen and at the close of this period a rig was being erected for the drilling of the Arca well. A considerable amount of geological survey work, followed by a seismic survey, was done in this area and a unitization scheme was drawn up whereby all the owners of petroleum and natural gas rights within the area pooled their interests in production to be obtained.

The advantages of unitization are many, the main one being that with the field under unit control, drilling can proceed in an orderly manner according to data obtained and the field development carried out with a view to recovery of the greatest amount of oil or gas at the least cost and with regard to available markets.

The great difficulties in effecting conservation in Turner Valley and the tremendous waste not only of the recoverable petroleum products but also in the drilling of a great many more wells than necessary could have been entirely obviated if the field had been under unit control.

Last year's report showed that the greater part of Alberta's city and town population is now served with natural gas. During the year two tests were drilled for gas to serve towns now without that utility. One near Vegreville gave negative results, and the other near Vermilion leaves possibilities at that point unproven. The well started near Cardston made little progress during the period but remains as a prospect at a depth of 2,680 feet. These three wells cover the total of prospects intended solely for gas supply.

In the search for new oil fields, progress was made in three wells near Lundbreck in the "Watson Structure" and operations were continuing in two of them at the end of the year.

Near Pincher Creek, the Weymarn well was given a further test to a considerably greater depth. Some indications of oil were reported, but production had not been attained when operations were suspended at 5,668 feet.

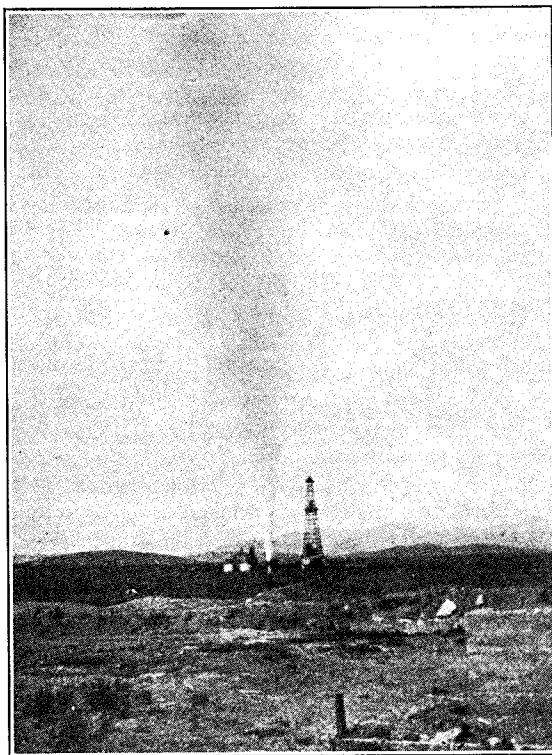
The Hunter Valley test in the Foothills west of Olds was continued and drilling was progressing at 5,474 feet by the end of March.

New Valley Well, No. 1, east of the north end of Turner Valley, was resumed after standing idle since 1928 and made good progress. The Ranchmen's well near Aldersyde has had sufficient indications of oil to encourage prospecting in the Alberta geosyncline, east of Turner Valley. Resumption of drilling at the New Valley well was one of the operations undoubtedly affected by the indications at Ranchmen's.

Near Comrey, in the south-east corner of the Province, a well was under way and had made 3,206 feet depth at the end of March. This was an effort to take advantage of conditions which appeared favourable for oil accumulation to the north-east of the Sweet Grass Hills.

A third test was started near Twin River and the Terminal well near Dei Bonita was nearly complete with a flow of gas, carrying some oil, issuing from the Madison limestone. In February, 1936 a well in the Cut Bank Field, Montana found a large oil horizon in the Sunburst sand after passing it with rotary tools. Terminal had also passed this horizon with rotary tools and consequently perforating of the casing was tried at this horizon for a further test but without positive results.

In Turner Valley drilling progress was at a low point. Production from gas-naphtha wells in the newest southern part of the field was dropping rapidly and general field pressure was being dissipated. Royalite, No. 26, a distant offset to Model, No. 1, was completed as a big gas and naphtha producer,



Century well blowing for annual test, south of Turner Valley

and Royalite, No. 27, a closer offset to Model, No. 3, was also drilled to completion. Model, No. 3, some distance south of Model, No. 1, was drilled to completion in less than six months. All three of these wells are in an area that had not been closely drilled.

In the southern part of the field, Publix drilled the last 50 feet for completion as a small gas-naphtha producer; British Dominion, No. 4, started producing but continued drilling deeper and was obtaining a product rather heavier than naphtha.

Highwood Sarcee, No. 2 was started as the most southerly well in the field. Renfrew, No. 1 got into mechanical difficulties. Union Freehold, No. 1 had serious mechanical trouble but successfully got out of difficulties and was near to production by the end of March.

The Turner Valley Royalties well, after being suspended for ten months, resumed operations in May, 1935, apparently encouraged by the performance of nearby Century Royalties, No. 1. While the purchasers of oil from Century classed it as discoloured crude naphtha, it gave some evidence of containing fractions not volatile at temperatures likely to be encountered in the limestone and, therefore, at least a part of its oil was in liquid phase when in its natural container. It had appeared for some time that the oil from most of Turner Valley limestone wells had been in a vapour state while in the natural container. Century production, furthermore, did not show the very rapid decline noted at most of the vapour phase wells.

It is not entirely possible to distinguish between production of vapour phase and liquid phase oil from Turner Valley, for there are wells which under certain operating conditions will produce 73° naphtha, which is highly volatile, and under other conditions will produce a crude of 40° to 50°. On segregating all of the production from several wells which are known to yield crude from the limestone, the following comparison for this fiscal year and for the previous one is given, quantities being in barrels:

	Crude	Separator Naphtha	Plant Recoveries	Limestone Total
1934-35	92,141	692,144	407,941	1,192,226
1935-36	137,287	528,089	531,117	1,196,493

It will be seen from the above table that without increased plant recoveries and liquid phase oil, there would have been a drastic decrease in total production.

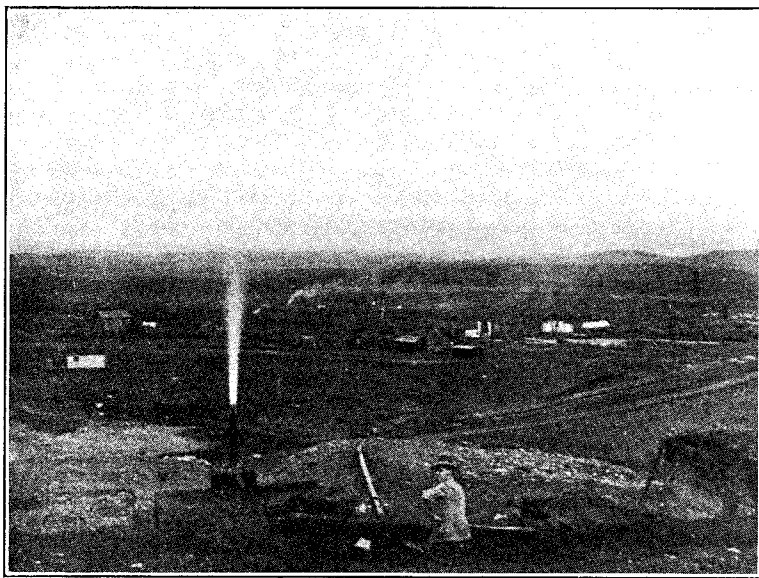
During the year, quotas for gas withdrawal were discontinued. No penalties had ever been imposed for violation of quota and as a result those who faithfully observed the quotas were put to a disadvantage by others who had paid no attention to them. It never appeared that vapour phase wells obtained more oil as a result of exceeding quotas, but their excessive withdrawals hurt their neighbours as well as themselves. Statistical conclusions suggest that when gas is drawn too rapidly, much of the oil held in it as a vapour condenses in the limestone and much of the condensed oil fails to reach the well. Due to offset production races and the almost universal overdraw of the wells, general depletion of gas reserves has proceeded at a very rapid rate particularly in the area at the south end of the field and to some extent at the north end. Continued supply of natural gas for Calgary, Lethbridge and the towns between would be threatened but for a partial reserve created in an area owned by a single operator, where most of the wells have been voluntarily closed in.

Pressure tests and test of flow at $\frac{2}{3}$ of the closed pressure were made at all Turner Valley wells in August, 1935. The maximum pressure drop at a well in the south end was 360 pounds in a year. In an area which had not been drawn on for about eight months, the pressure was greater than it was a year

earlier by amounts varying between 8 and 78 pounds. This was interpreted as showing equalization of pressure within the area.

Total gas withdrawn from the limestone to the end of March, 1936 is estimated at 807,360,000 Mcf.,* 90,250,000 Mcf. representing the amount withdrawn during the year under review.

Repressuring of Bow Island field by pumping gas from Turner Valley into the reservoir sand continued throughout the year save for a period in August, when it is customary to allow equalization for long enough to draw conclusions as to results that are being obtained, and to overhaul equipment. During most of February, demand for gas throughout the extremely cold weather taxed pipe line capacities to the limit and repressuring was discontinued for the greater part of the month but was resumed as soon as the demand for gas dropped to normal. At the end of March the pressure was about 504 pounds.



Longview well blowing for annual test, south of Turner Valley

Very little gas was drawn from Foremost, the only withdrawals taking place in February when demand was heaviest. Field pressures were not reported to the Division.

Medicine Hat wells in June showed a weighted mean pressure of 410 pounds, an increase of two pounds in a year. This increase is so small as to leave little room for comment. It may have been due in part to the difficulty in observing surface pressure closely enough, equalization from undrawn areas proceeding at a more rapid rate than gas was withdrawn or the replacement of gas by water.

Redcliff mean pressure in the summer of 1935 was 391 pounds, a decrease of fifteen pounds in the year.

Viking weighted mean pressure in the fall of 1935 was 591 pounds, a drop of 14 pounds in the year. Kinsella field was not drawn on and not tested. Fabyan wells, supplying gas to Wainwright, were not tested for closed pressure.

*Mcf.—Thousand cubic feet.

The bituminous sands of the Athabaska River have for many years been known as a potential source for heavy petroleum products. When the demand for such products has reached a stage where these deposits can compete with similar ones produced elsewhere, it is fully to be expected that their exploitation will become an important industry. Interests from the United States believe that the time for such exploitation is so near that leases have been acquired from the Dominion Government together with a reservation from the Province of Alberta and it is understood that a plant will be erected in 1936 for separation of sand from the bitumen.

OIL PRODUCTION FOR FISCAL YEAR

Quantities in Barrels of 35 Imperial Gallons

Turner Valley, limestone (naphtha and light crude)	1,196,493
Turner Valley, other (light crude)	17,220
Red Coulee-Border, light crude	20,051
Wainwright, heavy crude	13,958
Skiff, heavy crude	1,874
Total.....	1,249,596

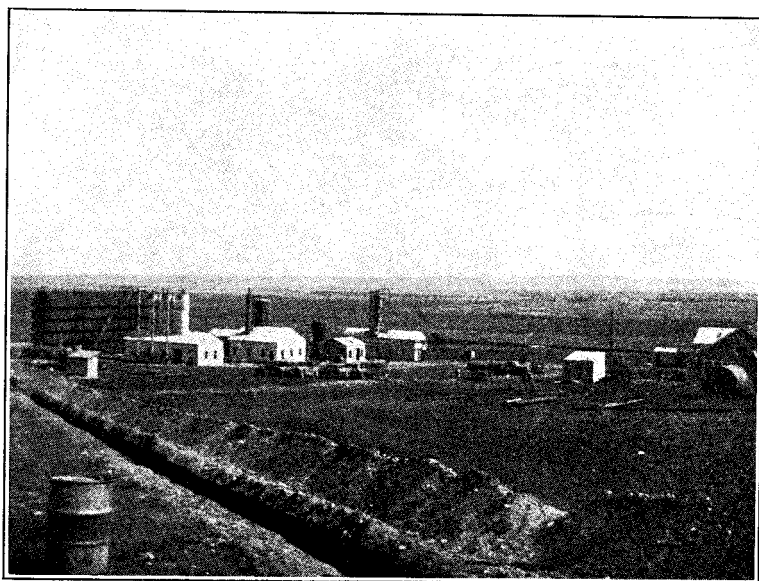
VALUE OF PRODUCTION 1935-36

Turner Valley, limestone	\$2,731,246.00
Turner Valley, other	34,784.00
Red Coulee-Border, light crude	25,064.00
Wainwright, heavy crude	12,562.00
Skiff, heavy crude	937.00
Total.....	\$2,804,593.00

SUMMARY OF OIL PRODUCTION IN ALBERTA

Period	By Fiscal Years						Total
	Turner Valley Limestone	Other	Red Coulee	Wainwright	Ribstone	Skiff	
*1914-34	6,805,671	383,835	191,951	59,058	15,074	5,914	7,461,503
1934-35	1,192,226	19,827	20,519	13,876	.....	510	1,246,958
1935-36	1,196,493	17,220	20,051	13,958	.....	1,874	1,249,596
Totals.....	9,194,390	420,882	232,521	86,892	15,074	8,298	9,958,037

*Under federal administration prior to October 1st, 1930, and under provincial following that date



British American Plant, south of Turner Valley, during construction

DEPARTMENT OF LANDS AND MINES

SUMMARY OF OIL PRODUCTION IN ALBERTA
By Calendar Years

Period	Turner Valley Limestone	Other	Red Coulee	Wainwright	Ribstone	Skiff	Total
*1914-33	6,483,647	376,499	186,245	57,883	15,074	5,914	7,125,262
1934	1,210,766	21,896	20,989	11,779	.....	510	1,265,940
1935	1,208,321	18,691	20,536	14,638	.....	1,564	1,263,750
1936—3 months	291,656	3,796	4,751	2,592	.....	310	303,105
Totals	9,194,390	420,882	232,521	86,892	15,074	8,298	9,958,057

OIL PRODUCING WELLS IN PROVINCE
1935-36

	Producing	Closed in	Total
Turner Valley—oil and gas	80	21	101
Turner Valley—light crude only	8	.....	8
Red Coulee	8	.....	8
Wainwright	6	3	9
Skiff .....	.....	1	.....
	<u>102</u>	<u>25</u>	<u>127</u>

GAS WELLS NOT INCLUDED WITH OIL WELLS

	Producing	Closed in	Total
Medicine Hat	46	.....	46
Bow Island .....	.....	11	11
Foremost .....	.....	6	6
Milk River area	1	2	3
Viking	23	.....	23
Kinsella .....	.....	3	3
Fabyan	2	.....	2
Brooks	5	.....	5
Wetaskiwin	1	.....	1
	<u>78</u>	<u>22</u>	<u>100</u>

COMPARATIVE STATEMENT OF FOOTAGE DRILLED IN WELLS

Fiscal Year	Turner Valley	Foothills West of Turner Valley	Rest of Province	Total
*1930-31	112,043	14,373	88,544	214,960
1931-32	37,695	2,173	36,505	76,373
1932-33	13,812	813	21,495	36,120
1933-34	65,773	2,417	14,183	82,373
1934-35	70,555	4,850	15,163	90,568
1935-36	24,383	6,120	25,999	56,502
Totals	<u>324,261</u>	<u>30,746</u>	<u>201,889</u>	<u>556,896</u>

GAS USED IN ALBERTA

1935-36

Quantities in Mcf.†

From Foremost		70,911
From Turner Valley:		
Calgary-Lethbridge	6,968,545	
Refinery	897,023	
For storage and fuel	1,488,166	
Bow Island town	47,954	
Field use	<u>2,840,148</u>	
		12,241,836
Brooks		54,494
Edmonton and towns		3,200,293
Wainwright, town	105,695	
field use	<u>23,500</u>	
		129,195
Medicine Hat		2,131,224
Redcliff		683,201
Exported to Montana		117,256
Red Coulee, field use		39,034
Miscellaneous, field use		<u>7,500</u>
Total		<u>18,674,944</u>

†Mcf.—Thousand cubic feet.

*Under federal administration prior to October 1st, 1930, and under provincial following that date

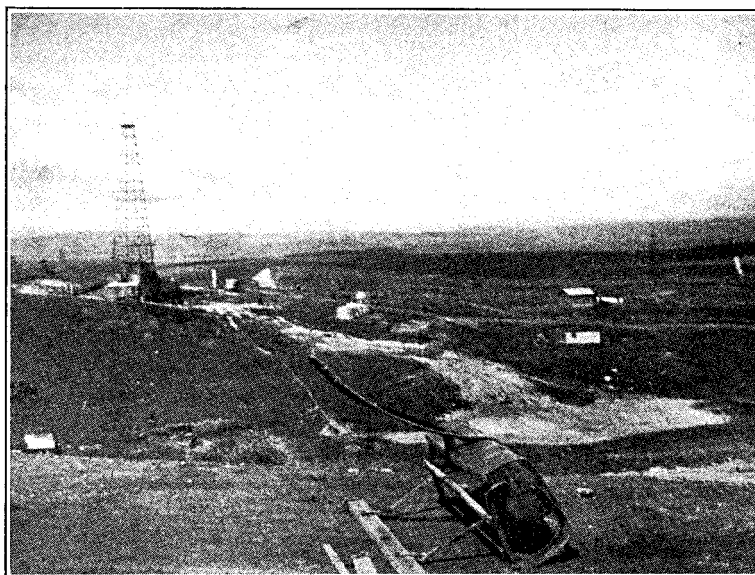
ESTIMATE OF WITHDRAWALS AND WASTE OF GAS FROM TURNER VALLEY

Fiscal Year Periods	Mcf.* Drawn	Mcf.* Wasted
To end of March, 1934	629,550,000	537,610,000
1934-35	87,560,000	76,440,000
1935-36	90,250,000	78,020,000
Total to end of March, 1936	807,360,000	692,070,000

APPARENT DEMAND FOR OIL IN ALBERTA

Calendar Year, 1935		Barrels
In store, beginning of year		859,800
Produced in Alberta		1,263,750
Imports, lubricants	18,859	
Imports from U.S.A., direct	1,982,487	
Imports via British Columbia	56,188	
Total to account for.....		2,057,534
Exports, crude	448,867	
Exports, refined	433,263	
Lubricants (as imported)		882,130
Fuel oil sales, taxed		18,859
Refining and handling losses, untaxed oil, etc., by difference		1,355,510
On hand, end of year		981,891
Total accounted for.....		942,694
		4,181,084

*Mcf.—Thousand cubic feet.



Looking west from C. & E. Longview well, south of Turner Valley

These figures have been brought together by co-operation with the Provincial Secretary's Department and Dominion Customs. It should be noted that kerosene, and distillates suitable for diesel engines and tractors but of a gravity lower than gasoline, were not taxed. It is, therefore, impossible to distinguish between refining losses and such distillates but a fair indication is given as to the magnitude of oil demand. Imports entered through Customs for con-

sumption in Alberta were greater than shown above by over 200,000 barrels but owing to the fact that some oil entering through Alberta ports of entry goes on to other provinces, the figures of the Provincial Secretary have been used, excepting for lubricants.

Forestry

REPORT OF THE DIRECTOR OF FORESTRY, T. F. BLEFGEN

The fiscal year 1935-36 dated a further broadening of Forest Service responsibilities. Following the abolition of the Edmonton Agency the various administrative duties of that agency were taken over by each division of the Department of Land and Mines directly concerned. The administration of all matters pertaining to timber on provincial lands passed to the Forest Service and the staff formerly employed by the Edmonton Agency on timber administration was transferred to the head office staff of the Forest Service. The change is a logical one in that it places under one division of the Department all timber administrative matters in so far as provincial lands are concerned and this together with the former change which brought all forestry field work under the Forest Service should result in uniform policy, methods and procedure throughout the Province.

During the year the timber industry showed a slight improvement over the preceding year both as to production and markets. The feature which is lacking in order to properly re-establish operations is a resumption of building construction. The Department has been cognizant of the difficulties of the past few years and has endeavoured to meet the situation so as to help the industry, the farmer and the settler. In doing so, every effort has been made to so manage the Province's forest estate that future general development will not be handicapped by unwise provisions to meet present conditions.

Considering fire prevention and its relation to forest protection, the year was an outstanding one. It is probable that this Province will never again experience a fire season during which fire destruction and fire-fighting cost will be so low. The fact that such a satisfactory year may be recorded is not explained by any large improvement in protection measures though in south-western Alberta the normal field staff did meet and deal with a hazardous period very successfully. Aside from this area, the explanation is due to regular rains over wide-spread areas together with vigilance on the part of the field staff. The results while exceedingly satisfactory do not point to a permanent improvement and until definite steps are taken, having in view a general betterment of field organization, no such permanency in improvement can be expected.

Again an increase in field work is to be recorded, particularly regarding inspection work. Fortunately the timber inspectors were relieved of land sub-agency duties late in the year, permitting them to give their complete attention to forestry work. In the last few years the increase of inspection work has been enormous and has placed a heavy burden on the responsible officials. It has only been possible to meet the situation by an exceptional degree of activity on the part of inspectors and by using qualified rangers to assist on inspection work as the fire season permitted.

The forest nursery at the Oliver Institute has reached its maximum development under existing conditions. Further expansion is limited by the fact that land for tree nursery purposes is not readily available and also by the fact that the point has apparently been reached where further labour supply from the Institute is not to be expected. Under these circumstances and if the output of planting stock is to be further increased, it will become necessary to make other arrangements.

FOREST PROTECTION

The control of destructive agencies is one of the basic requirements of forest management. Advancing civilization has inevitably carried with it the threat of destruction to the forest. This is difficult to reconcile with present day and future requirements for the development of territory from its raw state to the point where it serves humanity to the utmost, which requires that the forests and the products thereof must enter into the economic plan extensively. It is apparent, however, that the broad importance of forest cover and of readily available forest products has not been realized by many individuals. Lacking this understanding, it is natural that little thought will be given to the welfare of this resource and explains why a degree of carelessness and thoughtlessness in the use of fire in and near forests has developed.

Fire Season.—A generous snowfall was recorded over all forested territory excepting the Cypress Hills and Crowsnest-Bow River regions. The spring season opened late accompanied by cool temperatures which retarded the growth of vegetation. The usual spring fire danger period was practically non-existent and was followed by a summer also accompanied by cool temperatures and, excepting in southern Alberta, regular and heavy rain storms. The most hazardous region was the Cypress Hills which escaped the storms of the western and northern areas. A danger period from the middle of July to the end of the fire season was experienced in this district.

In the southern part of the Crowsnest-Bow River Forest there were short periods of danger during which fires would have been difficult to control. Generally speaking, however, the danger was below normal in this region.

The situation over the rest of the Province was exceptionally favourable due to abnormal precipitation and due, although a heavy frost was recorded in mid-August, to the fact that the killing frosts did not come until later. The fall fire season did not develop into a dangerous one on account of excessive moisture.

Fire Prevention.—With conditions, as explained above, it will be evident that the clearing activities of settlers were greatly decreased, that the hazard from ground fires ignited during the winter was almost totally absent and that the dangers from unextinguished camp fires were not great.

The contact between the field staff and the public in various necessary directions was maintained and control of the entire situation made as effective as possible. The proclamation, prohibiting open camp fires in a defined area in south-western Alberta, was again in effect and provided good results due mainly to a fair degree of enforcement and a satisfactory response from the public.

The programme of improving popular camping grounds within the forest reserves was continued and, as a safety measure for the nearby forests and convenience to the public, it is an activity which should be greatly enlarged. The aim is to provide for safety measures to the extent that restrictions which would have the effect of greatly curtailing recreational activities will not be so necessary on emergent occasions.

The maintenance of fire preventive appliances on railway locomotives received satisfactory attention and over the majority of railway mileage through forested territory the rights of way were kept clear of debris and inflammable growth.

The co-operation received from all concerned with fire prevention has given the Forest Service vast encouragement and to those who have assisted in this way, either in the course of duty or as a purely voluntary contribution, it is desired to voice an appreciation.

BURNING PERMITS ISSUED, PROVINCE OF ALBERTA, 1935

By the Forest Service:		
Cypress Hills		
Crowsnest		
Bow River	1	
Clearwater	467	
Brazeau	9	
Athabaska	7	
By the staff of the Forest Reserves		484
Edmonton	81	
Edson	132	
Athabaska	107	
Bonnyville		
McMurray	24	
Slave Lake	200	
Grande Prairie	253	
Peace River	142	
By the staff of the Northern Alberta Forest District.....		939
Sub-total	1,423	1,423
By Outside Agencies:		
Honorary Fire Guardians:		
Edmonton	163	
Edson	163	
Athabaska	79	
Bonnyville	60	
McMurray	3	
Slave Lake	180	
Grande Prairie	92	
Peace River	145	
Other Areas	13	
Fire Guardians in Municipal Districts		898
Royal Canadian Mounted Police		99
Sub-total	1,256	1,256
TOTAL		2,679

PROSECUTIONS AND CONVICTIONS
PRAIRIE FIRES ACT

1935

	Instituted by Forest Service	Instituted by other agencies	Totals
Number of prosecutions	2	2	4
Number of convictions	2	2	4

Fire prevention measures secured through the control of camping and travel activity within the forest reserves again showed good results, and this is evident when it is known that this activity exceeded that of previous years, that road conditions were good permitting extensive travel and that due to a somewhat dry season in south-western Alberta there was a distinct danger period.

Fire Detection.—The need for an enlargement of detection services has been emphasized for several years. It was reported last year that the Forest Service had completed look-out towers in an important timber area between the Brazeau and Athabaska rivers. These towers make it possible to provide for detection coverage over a large area just as soon as suitable communication has been arranged. The towers are not of any great value until such an arrangement has been completed and, with the present day development of two-way radio and wireless communication, the time has arrived to take immediate and definite action which would have in view the setting up of a detection service that will more nearly answer forest protection requirements.

Fire Suppression.—The season was probably the most favourable one ever experienced since forest protection measures were initiated. As such it does not provide for a basis of comparison with what may be expected in the future. The small amount of money actually spent on fire-fighting and the comparatively insignificant destruction which followed this year's forest fires can only be regarded

as mainly a result of favourable weather conditions. It will be evident this is so when it is pointed out that during the fire season the coverage in this Province and the various agencies employed in connection with forest protection are the same as those employed twenty to twenty-five years ago. There has been an improvement in staff efficiency, but it will be obvious, on examination, that the area over which it is desired to provide protection is altogether too large to be adequately dealt with by the existing staff.

During the year 97 fires were fought, 50 of these being Class A or under one-quarter of an acre and 31 being Class B or under 10 acres in extent, but four fires exceeded 500 acres. An examination of the statement showing the annual summary of fire losses will prove enlightening and will show that in a year such as the one just passed the staff is able to keep the majority of fires within very reasonable bounds.

The fire loss is estimated to be \$5,768.00 and the total suppression costs including ranger service, that is, the services of the ranger when actually engaged on fire-fighting, amounted to \$1,653.46. It will be a long time before this Province experiences just such a favourable year for forest protection.

Causes.—During the year conditions were not favourable for burning by settlers and this is reflected in the "Causes Statement." The principal source of fire was due to campers, who were responsible for a total of 41, followed by incendiary, 22, railways, 10, smokers, 9, and settlers, 8.

COMPARISON OF FIRE CAUSES BY PERCENTAGE					
Causes	1931	1932	1933	1934	1935
Campers	23.7	52.8	38.9	35.4	42.3
Smokers	3.2	5.3	13.5	11.7	9.3
Settlers	21.9	17.1	17.4	17.9	8.2
Railways	6.6	4.5	2.8	5.0	10.3
Lightning .....	.6	2.6	5.2	7.5	1.0
Industrial Operations	1.9	1.1	1.7	4.2	1.0
Incendiary	15.1	8.2	11.8	11.2	22.7
Public Works	1.4	.5	1.4	1.3	1.0
Unclassified	1.5	1.6	....	2.5	2.1
Unknown	24.1	6.3	7.3	3.3	2.1

RAILWAY FIRE LOSSES CALENDAR YEAR 1935

This statement deals only with fires burning on forested areas under the supervision of the Alberta Forest Service, and which started within 300 feet of the centre line of the railway right of way. In this defined territory no fires burned on the Canadian National or the Canadian Pacific Railways, all fires reported being on the Northern Alberta Railways.

<i>Causes and numbers of fires:</i>		
Railway causes—Locomotives	10	
Employees	—	
Sub-Total	10	
Other causes—Campers and travellers	3	10
Settlers	—	
Unknown	1	
Sub-Total	4	
TOTAL	—	4
TOTAL		14
<i>Number of acres burned:</i>		
Slashing or old burn	33	
Timber land	20	
Young growth	—	
Not forested	496½	
TOTAL	—	549½
<i>Loss:</i>		
Timber	\$187.50	
Young growth	—	
Forest products	—	
Other property	—	
TOTAL	—	\$187.50

ANNUAL STATEMENT OF FIRES BY CAUSES, MONTHLY DISTRIBUTION, ETC., WITHIN FOREST RESERVES, ALBERTA—CALENDAR YEAR, 1935

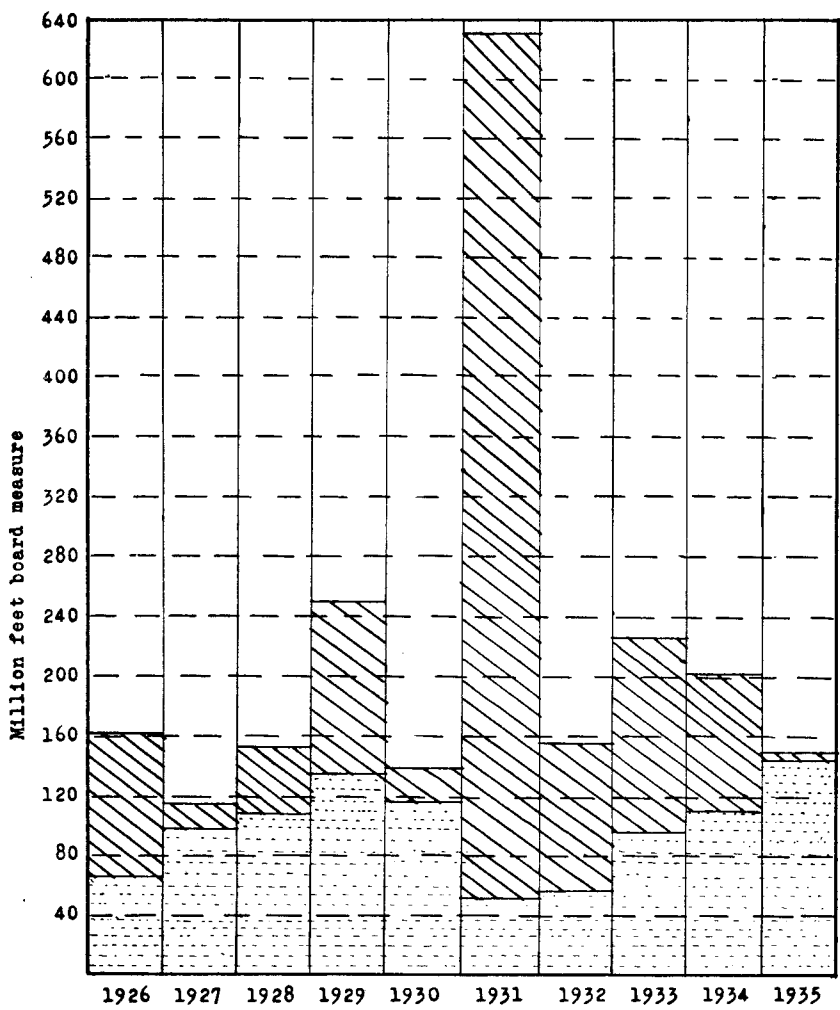
Cause	Number						Damage	Area	Monthly Distribution												Fires Inside Provincial Forests					
																					Prose- cutions	Convic- tions	No.	Area		
	A	B	C	D	Tot.	P.C.			Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.						
Camp-fires	3				3	25.0		Acres								3						1	1	3		Acres
Smokers	3	1			4	33.4	\$45.50	6					2	1		1								4		6
Settlers																										
Railways																										
Lightning	1				1	8.3							1											1		
Industrial																										
Operations	1				1	8.3				1														1		
Incendary																										
Public Works													1													
Unclassified	1	1			2	16.7		½					1											2		½
Unknown	1				1	8.3																		1		
TOTALS	10	2			12	100	\$45.50	6½				1	4	1		4	1					1	1	12		6½
Per cent.	83.3	16.7			100					8.3	8.3	33.4	8.3	33.4	8.3	33.4	8.3									

ANNUAL STATEMENT OF FIRES BY CAUSES, MONTHLY DISTRIBUTION, ETC., OUTSIDE FOREST RESERVES, ALBERTA—CALENDAR YEAR, 1935																								
Cause	Number					Damage	Area	Monthly Distribution												Prosecutions	Convictions	Fires Outside Provincial Forests		
	A	B	C	D	Tot.			P.C.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.			Dec.	No.	Area
Camp-fires	28	6	3	1	38	44.71	\$4,190.75	3,393	7	4	4	7	7	1	38	3,393
Smokers	2	2	1	.....	5	5.88	7.50	40	.....	.....	.....	.....	2	1	1	1	1	.....	.....	.....	.....	5	40
Settlers	3	.....	4	1	8	9.41	110.00	990	.....	.....	.....	.....	7	.....	.....	.....	.....	.....	.....	.....	.....	8	990
Railways	5	4	.....	1	10	11.76	187.50	542½	.....	.....	.....	.....	6	3	1	.....	.....	.....	.....	.....	.....	10	542½
Lightning	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Industrial	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Operations	1	16	4	1	22	25.88	1,224.25	1,347¼	.....	.....	.....	.....	8	12	.....	1	1	.....	.....	.....	.....	22	1,347¼
Incendiar	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Public Works	.....	1	.....	.....	1	1.18	2.50	½	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	½
Unclassified	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Unknown	1	.....	.....	.....	1	1.18	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....
TOTALS	40	29	12	4	85	100	\$5,722.50	6,313¼	.....	.....	.....	.....	30	23	6	5	11	8	1	1	1	85	6,313¼
Per cent.	47.06	34.12	14.12	4.7	100				.....	.....	.....	.....	35.3	27.0	7.1	5.9	12.9	9.4	1.2	1.2			

ANNUAL STATEMENT OF FIRES BY CAUSES, MONTHLY DISTRIBUTION, ETC., WITHIN AND OUTSIDE FOREST RESERVES, ALBERTA—CALENDAR YEAR, 1935

Cause	Number					Damage	Area	Monthly Distribution												Prosecutions	Convictions	Fires Inside Provincial Forests		Fires Outside Provincial Forests						
	Number							Monthly Distribution														Fires Inside Provincial Forests		Fires Outside Provincial Forests						
	A	B	C	D	Tot.			P.C.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.			Dec.	No.	Area	No.	Area				
Camp-fires	31	6	3	1	41	42.27	\$4,190.75	Acres	3,393	.....	.....	.....	.....	7	7	4	4	10	7	1	1	1	1	3	.....	38	3,393	Acres	3,393	
Smokers	5	3	1	.....	9	9.28	53.00	46	.....	.....	.....	.....	.....	2	.....	3	2	2	.....	.....	.....	.....	.....	4	6	5	40	.....	5	40
Settlers	3	.....	.....	.....	8	8.25	110.00	990	.....	.....	.....	.....	.....	7	.....	.....	.....	1	.....	.....	.....	.....	1	.....	.....	8	990	.....	8	990
Railways	5	4	.....	.....	10	10.31	187.50	542½	.....	.....	.....	.....	.....	6	3	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	10	542½	.....	10	542½
Lightning	.....	.....	.....	.....	.....	1.03	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Industrial	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Operations	.....	.....	.....	.....	.....	1.03	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Incendiarv	.....	.....	.....	.....	.....	22	22.68	1,224.25	1,347¼	.....	.....	.....	.....	8	12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Public Works	.....	.....	.....	.....	.....	1.03	2.50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Unclassified	.....	.....	.....	.....	.....	2	2.06	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Unknown	.....	.....	.....	.....	.....	2	2.06	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
TOTALS	50	31	12	4	97	100	\$5,768.00	6,319¾	.....	.....	.....	.....	.....	31	24	10	6	15	9	1	1	2	2	12	6½	85	6,313¼	.....	85	6,313¼
Per cent.	51.55	31.96	12.37	4.12	100	.....	.....	.....	.....	.....	.....	.....	.....	32.0	24.7	10.3	6.2	15.5	9.3	1.0	1.0	.....	.....	.....	.....	.....	.....	.....	.....	.....

GRAPH OF TIMBER DEPLETION, PROVINCE OF ALBERTA
1926 TO 1935, INCLUSIVE



During this period the total depletion was 2,184,667,170 feet board measure, of which 45.12% was utilized and 54.88% destroyed by fire.

- Legend:
- Timber destroyed by fire
 - Timber utilized

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Personnel.—It has already been remarked that field staff strength which provides coverage for protection and administrative purposes remains the same as for many years past. The situation is not satisfactory either as to the period of employment of the seasonal staff or as to the number of staff employed on a permanent basis. A review of the improvements constructed within the forest reserves in particular, and elsewhere in the Province where the Forest Service has been responsible for the construction of improvements, reveals that trails, roads and telephone lines are becoming gradually more and more difficult to maintain. Ordinary maintenance can be dealt with by the regular staff provided a permanent staff of sufficient size is employed to give minimum maintenance during the winter months and provided also that the seasonal staff is employed sufficiently long enough to permit the various improvements to be properly reconditioned during the summer. In connection with roads, trails and telephone lines, however, there is the matter of replacement of larger bridges, long sections of corduroy and the replacement of pole line sections of telephone lines. Organized crews are necessary for the purpose of attending to such work.

It is desired also to again emphasize the fact that settlement on lands adjacent to timber regions has greatly increased in the last few years and that this settlement is always followed by fire danger. It is essential for the purpose of forest protection that the field staff be enlarged sufficiently to meet present requirements.

Fire-fighting Equipment.—Previous reports have pointed out the need for supplying fire-fighting equipment in greater quantities. A season of destructive fires will make this only too apparent, and it would be regrettable if the present inadequate staff was handicapped due to the lack of sufficient equipment.

Co-operation.—Generally speaking the public has given support in matters of fire prevention and forest protection and in many localities it is believed that some headway has been made in having the citizens of the Province realize the importance of forest cover. The solution of the main protection problem is to be found in this direction.

The necessity for a satisfactory co-operative arrangement with the Province of British Columbia is only too apparent. During the past fifteen years it has been evident that territory in Alberta adjacent to the British Columbia boundary is greatly endangered through fires originating in that Province, and in recent years with the reduction of the protective staff in British Columbia and the withdrawal of a large number of staff from the interior of that Province, the danger has been considerably greater. It is present, in particular, from Kananaskis Lakes to Waterton Park in the south, and in northern Alberta from the point where the main range of the Rocky Mountains ceases to be the inter-provincial boundary north to the Northwest Territories. Any effort that is made on the part of Alberta to protect forests in the two sections referred to may easily be nullified by the lack of suitable provision made by the neighboring Province.

This is a matter of grave concern and should be dealt with definitely through both provinces undertaking to arrange for forest protection in territory adjacent to the interprovincial boundary on a basis which will provide some assurance that the efforts of one province will not be nullified by a lack of effort of the other.

FOREST ADMINISTRATION

Provincial Forest Reserves.—A decrease in the amount of timber taken under timber sales and timber permits will be noted, excepting that there has been an

increase in the amount of mining timber required for the operation of coal-mines located within forest reserves. The decrease in the number of permits is particularly noticeable in the Cypress Hills Forest Reserve, where, no doubt, hauling conditions had the effect of reducing the number of such operations. The salvage of timber in this Reserve which was fire-killed by the Willow Creek fire continued and good results in a clean-up of the fire area are being obtained.

The consolidated statement of timber operations on provincial lands, which now includes those within forest reserves, will indicate the extent of these activities.

TIMBER CUT UNDER PERMIT, ALBERTA FOREST RESERVES
FISCAL YEAR 1935-36

	Cooking Lake	Cypress Hills	Crownest- Bow River	Clearwater	Brazeau- Athabaska	Totals
Number of permits	12	191	389	21	26	639
Fuelwood, dry, cords	11	488½	4,827	37	143	5,506½
Fuelwood, green, cords .....	.....	1	128	.....	.....	129
Mine timber, dry (lineal feet) .....	.....	.....	503,500	130,000	.....	633,500
Mine timber, green (lineal feet) .....	.....	724	5,000	4,000	.....	9,724
Lagging, cords .....	.....	.....	10	.....	.....	10
Lagging (lineal feet) .....	.....	.....	15,000	6,000	.....	21,000
Fence posts	2,600	991	8,013	.....	84	11,688
Sawlogs (F.B.M.) *	7,000	.....	1,514,636	.....	8,000	1,529,636
Round timber (pieces)	530	22,328	22,757	.....	682	46,297
Round timber (lineal feet)	300	319	29,425	.....	37,918	67,962
Fence droppers (pieces) .....	.....	.....	1,800	.....	.....	1,800
Fence droppers, cords .....	.....	6	.....	.....	.....	6
Telephone poles (pieces) .....	.....	.....	315	.....	.....	315
Telephone poles (lineal feet) .....	.....	.....	668	.....	.....	668
Christmas trees .....	.....	4	.....	.....	.....	4

*F.B.M.—Feet, board measure.

STATEMENT OF TIMBER OPERATIONS ON PROVINCIAL LANDS

	Licensed Timber Berths	Permit Timber Berths	Forest Reserve Timber Sales	Provincial Lands Timber Permits	Forest Reserve Timber Permits	Totals
No. of active operations	38	196	20	2,697	639	3,590
Lumber (feet, board measure)	39,711,042	24,793,424	2,923,934	15,597,364	1,529,636	84,555,400
Railway ties	172,248	916,079	46,041	252,928	.....	1,387,296
Piling (lineal feet) .....	.....	.....	.....	70,656	.....	70,656
Mining timber (lineal feet) .....	.....	131,210	3,042,303	570,764	664,224	4,415,627
Lathing	5,405,264	1,796,532	.....	8,000	.....	7,209,796
Telegraph and telephone poles .....	.....	.....	.....	108,709	.....	109,505
Building logs (lineal feet) .....	.....	.....	.....	340,807	350	341,157
Fence rails .....	.....	.....	.....	605,357	.....	1,334,709
Fence posts .....	.....	.....	.....	127,186	.....	605,357
Shingles	98,410	937,500	.....	172,985	11,688	127,186
Shingle bolts (cords) .....	.....	.....	.....	188,450	.....	184,673
Cordwood (cords)	592	1,304	.....	113	.....	1,224,360
Number of inspection reports submitted by timber inspectors .....	.....	.....	.....	66,592	5,651 1/2	74,139 1/2
Number of timber seizures made .....	.....	.....	.....	2,796	.....	.....
.....	.....	.....	.....	158	.....	.....

Provincial Lands.—Effective at the beginning of the fiscal year certain changes in administration of forest resources were entailed as a result of a reorganization of the Department. The most important of these changes was the fact that the administration of timber on school lands in the Province was taken over by the Superintendent of School Lands and that the work of the Edmonton Agency in connection with the administration of timber was taken over by the head office of the Forest Service.

Generally speaking, the lumber industry during the year well maintained the slight upward tendency shown in the previous year, both as regards production and market conditions. The demand for railroad ties and other timber products was also well maintained. On the other hand, the continued lack of activity in building construction in the prairie provinces still exerted a depressing influence on the industry generally.

The reductions of dues, granted by order in council during the previous year, and which applied to sawn lumber manufactured from timber cut between October 1st, 1934 and September 30th, 1935 from timber berths in the Province, were extended by a further order in council to cover a similar material cut after that period until June 30th, 1936. It would appear that the granting and further extending of these reductions, while considerably reducing the revenue of the Department, have had a most encouraging effect which has been reflected in increased production and accompanied by the employment of workers who would otherwise be on relief.

There was a slight increase in the number of special permits to cut timber from isolated tracts not exceeding 160 acres in area and containing not more than 125,000 feet, board measure, 261 such permits being issued by the Edmonton and Calgary offices as compared with 252 in the previous year. Operations under these permits have been of considerable assistance to many small operators unable to finance a timber berth operation and have at the same time enabled the Department to dispose of detached blocks of timber too small to attract most timber berth operators.

Continued satisfactory results accrued from the agreement between the Bureau of Relief and Public Welfare and this Department under which permits, issued on behalf of individuals who would otherwise be on relief, authorized the cutting of railway ties from vacant provincial lands. The agreement was also extended to cover similar operations in getting out telephone poles and certain other classes of material.

During the depression years many representations have been made on behalf of all classes of timber operators and settlers in support of requests for reductions of dues, relaxation of regulations and extensions of privileges in utilization of the timber resources of the Province.

It is often overlooked that it is the duty of the Department in the interests of the people of the Province as a whole to so protect, conserve and administer these resources, that the maximum benefit therefrom may be secured with due regard to the interests of timber operators, settlers and the general public. Many also fail to realize that the former practice of the Dominion Government of granting timber to homestead settlers free of dues in order to assist them in getting established and in improving their homesteads has been continued by this Department since the transfer of the resources.

During the fiscal year 1935-36 such permits alone authorized the cutting of the following quantities of timber free of all dues: 205,472 lineal feet of building logs, 9,827,755 feet, board measure, of sawn lumber, 374,463 fence posts, 342,812 roof poles, 1,704,154 fence rails and 5,537 cords of fuel-wood. All of

this material was authorized to be cut from vacant provincial lands and is additional to material cut from homestead lands for use thereon, for which no permit is required. Throughout the period under review permits were also granted to cut 55,849 lineal feet of building logs and 1,018,259 feet, board measure, of sawn lumber from vacant provincial lands free of dues for the construction of educational, religious and charitable institutions, agricultural society buildings and rural community halls. Dues which would have been payable on the amount of material so granted, had these permits issued subject to the payment of dues at the regulations' rates, would aggregate well over \$80,000 at a conservative estimate.

Inspection and supervision work in 1935-36 made exceptionally heavy demands upon the timber inspectors. There was again a large increase in the number of inspections and investigations requested and made, in spite of the fact that with the exception of the last month or two, timber inspectors were still required to devote certain days in each month to the transaction of business relative to the sub-agencies of provincial lands at one or more points in their respective districts. During the year, with no increase in personnel, no less than 2,796 inspection reports were submitted, an increase of 22½% over 1934-35. Towards the end of the fiscal year arrangements were made whereby the inspection staff was relieved of further sub-agency work in their districts. This change has tended to alleviate a situation in which an excessive burden was seriously threatening the high standard of efficiency of the timber inspection work.

With regard to timber business transacted in the Edmonton District during the year 1935-36 the following figures are submitted:

(a) Products manufactured from timber berths held under yearly licenses and permits:—

	License Berths	Permit Berths
Lumber, feet, board measure	34,326,155	24,181,397
Railway ties	129,098	867,881
Mining timber, lineal feet	7,126	127,270
Shingles	98,410	822,500
Cordwood, cords	392	1,304

(b) 1,402 timber permits issued authorizing the cutting of the following material from provincial lands:—

Lumber, feet, board measure	11,401,028
Railway ties	147,844
Piling, lineal feet	39,186
Mining timber, lineal feet	531,344
Telephone and telegraph poles	108,705
Building logs, lineal feet	149,258
Fence rails	574,366
Roof poles	120,320
Fence posts	149,930
Shingles	182,000
Shingle bolts, cords	30
Lagging, cords	4
Boxwood, cords	25
Fuelwood, cords	4,306½

(c) 106 seizures made of timber cut from provincial lands as follows:—

Logs, lineal feet	190,424
Lumber, feet, board measure	4,449,943
Fence posts	9,855
Fence rails	150
Railway ties	19,317
Cordwood, cords	957
Shingles	402,250
Mine props	580

GRAZING

The grazing statement will provide an indication of the degree to which range within the forest reserves was utilized during the year. Practically all of this use takes place during the summer grazing season. It will be noted that there has been a slight increase in the number of permits issued, a decrease in the number of horses and a considerable increase in the number of cattle

and sheep grazed under permit. Again it can be recorded that almost complete utilization of forest reserve range existed within the Rocky Mountains Forest Reserve from the Elbow River south and over the entire Cypress Hills Forest Reserve.

Another season of drought conditions is recorded for south-western Alberta and at the end of the summer grazing season it was apparent that on certain grazing divisions a reduction in the carrying capacity would have to be made in order to protect the range. Conditions within the Rocky Mountains Forest Reserve and the Cypress Hills Forest Reserve were not nearly so bad in this respect as in the adjoining range territory. This is probably explained by the form of grazing control in effect and also due to possibly greater precipitation in the forested areas.

The results obtained from grazing cattle on forest reserve range under annual permit by the individual stockmen appear to be satisfactory in practically all cases. The form of privilege granted, the control that is possible through the regulations in effect and the procedure followed provide for a very satisfactory situation in so far as forest administration is concerned.

Stock was removed from the range at the end of the summer grazing season in fair to good condition. The condition depends to a large extent on the method of handling the stock during the grazing period and whether or not the stock is new to the range. It has been found that stock new to forest reserve range, such as utilized in Alberta, will not do very well during the first and sometimes the second season. It is probable that the combined effects of altitude and a change of forage provide an explanation.

GRAZING STATEMENT—ALBERTA FOREST SERVICE, 1935-36

Forest	No. of Permits	No. of Horses	No. of Cattle	No. of Sheep
Cypress Hills	70	254	2,762	.....
Crowsnest	198	884	13,949	3,814
Bow River	70	395	7,517	300
Clearwater	85	160	810	.....
Brazeau	101	266	59	.....
Athabaska	9	248	.....	.....
TOTALS	533	2,207	25,097	4,114

COMPARATIVE STATEMENT, GRAZING—ALBERTA FOREST SERVICE

Grazing year—	1931	1932	1933	1934	1935	Totals	Average
Number of permits	456	606	493	517	533	2,605	521
Number of cattle	15,041	20,086	20,230	22,557	25,097	103,011	20,602
Number of horses	3,417	3,377	3,185	2,541	2,207	14,727	2,945
Number of sheep	4,379	7,465	6,705	3,078	4,114	25,741	5,148

IMPROVEMENTS

The improvements referred to are those which have been constructed with a view to providing greater accessibility of forested regions, communication, housing for field staff, equipment, work and pack horses. The only part of the timbered area of the Province which has been developed to a satisfactory degree in this connection is that within the Rocky Mountains Forest Reserve and the area which formerly made up the Lesser Slave Forest Reserve. In these areas roads, trails, telephone lines, houses, cabins, barns and fences have been constructed, and on suitable locations hay meadows have been developed and pastures set aside and fenced so as to have summer and winter feed available for government and rangers' horses.

The actual manual work on practically all improvements is dealt with by the regular field staff of rangers and assistants though on the Clearwater Forest and the Brazeau-Athabaska Forest it was possible to employ additional assistance

for a short time in order to attempt to bring certain trails up to a reasonable standard. Such provision must be enlarged upon in order to permit this work which is of a routine nature to be properly completed each season. In this connection it is desired to point out that on a considerable number of trails and on almost every road there are structures, such as long corduroys and medium sized bridges, which periodically require reconditioning and on which it is not economical to employ the ranger or his assistant. It is also necessary to state that very little can be accomplished in this respect unless a crew of reasonable size is employed on such work. In addition, there arises at fairly definite periods the necessity for reconditioning pole line sections of telephone lines. Any resetting or the replacement of considerable sections of pole lines calls for the employment of a small crew.

In spite of the handicaps of a shortened period of employment for the seasonal staff and of the large reduction in the number of permanent staff, it has been possible so far to keep the improvements in fair condition. Under present circumstances it is no longer possible to make preparation for the summer's work during the winter, such as getting out bridge, culvert and corduroy timbers and preparing them for use, nor is it possible to keep telephone lines in reasonably good condition.

The seasonal staff has not been employed in the spring sufficiently far in advance of the fire season to permit of a complete overhaul of roads, trails and telephone lines, yet it will be at once apparent that all lines of communication should be in a satisfactory condition at as early a date in the spring as working conditions will permit. It is not possible otherwise to send word of fires from the look-outs nor is it possible for fire crews to be transported quickly as the telephone lines would not be working and the roads and trails may be blocked by the fall, winter and spring accumulation of windfall.

In divisions of the Northern Alberta Forest District the size of the staff employed does not permit any great amount of work to be done on improvements other than attempting to keep existing trails open. In the matter of accessibility, there is much to be done in a number of prominent ranging districts. In some of the important divisions of this large district, where at the present time utilization of timber is greater than in any other part of the Province, it is essential that funds be provided to permit the establishment of a radio communication. There are already established four look-out towers which give coverage over practically all of the timbered portion of the Edmonton Division, practically all of the Edson Division and the western portion of the Athabaska Division. In order to get the greatest use from these towers, it is necessary first to install a system of communication from tower to tower and from tower to ranger and secondly to provide for the employment of a look-out man at each tower during the danger periods of the fire season.

Timber operations in the Edson Division and adjacent territory in other divisions account for practically one-half of the saw timber of the Province and approximately 80% of the railway tie supply. This area, if put under proper forest protection and management, will provide a source of supply of such materials on the present scale for many years.

IMPROVEMENT STATEMENT

NEW CONSTRUCTION PROJECTS:														
Forest	Houses	Garages, Sheds, etc.	Fences	Fields (breaking in acres)	Water Supply Systems	Barns and Stables	Telephones (miles)	Corrals	Bridges	Look-out Towers	Trails (Miles)	Cabins	Fireguard Roads (Miles)	Tourist Stoves
Cypress Hills	...	2	...	...	1	1	1½	1	1	1	...	1	8½	3
Crownest	...	...	...	...	...	...	8½	2	...	...	...	...	...	...
Bow River	1	...	...	...	...	...	...	1	...	...	9	1	...	...
Clearwater	1	...	...	...	1	1	...	...	...	...	...	...	...	...
Brazeau	...	...	2	...	...	...	...	...	...	...	...	...	...	...
Athabaska	...	2	4	30	...	...	...	...	...	...	...	...	...	...
TOTALS	2	4	6	30	2	2	9	3	1	1	9	2	8½	3

MAINTENANCE PROJECTS:

Forest	Houses	Cabins	Barns and Stables	Telephones (Miles)	Trails (Miles)	Roads (Miles)	Fences	Corrals	Water Supply Systems	Garages, Sheds, etc.	Look-out Towers and Cabins	Grounds	Hay Meadows & Pastures	Ferries

Cypress Hills	1	9	6	13	217 1/2	80	2	3	1	2	...	1	...	...
Crownest	9	4	...	154	856	91 1/2	15	4	2	11	...	7	...	...
Bow River	7	9	8	243 1/2	864	2	24	...	3	8	4	14	5	...
Clearwater	2	9	1	175	294	...	6	...	1	5	...	...	...	1
Brazeau	6	13	3	138	475	40	8	...	2	2	2	6	...	...
Athabaska	2	12	2	65	...	...	...	1	2	...	...	1	...	...
TOTALS	27	56	20	790 1/2	2686 1/2	223 1/2	63	10	10	28	6	29	5	1

IMPROVEMENTS—STATEMENT OF MAN-DAYS WORKED

NEW CONSTRUCTION PROJECTS:

Forest	Garages, Sheds, etc.	Fences	Fields (breaking)	Water Supplies	Telephones	Corrals	Barns and Stables	Bridges	Look-out Towers	Houses	Trails	Cabins	Fireguard Roads	Tourist Stoves	Miscel- laneous
Cypress Hills	52	...	...	4 ½	1	3 ½	10 ½	3	16 ½	...	...	58	6 ½	2 ½	13 ½
Crownest	...	...	...	...	62	2	42	...	...	2 ½	7	5	...	...	...
Bow River	...	...	...	...	...	...	...	...	...	5	...	...	...	...	...
Clearwater	...	...	...	24	...	...	...	...	...	...	...	...	...	...	...
Brazeau	...	22	...	...	...	...	...	...	...	...	...	...	...	...	...
Athabaska	50 ½	60 ½	67	...	...	...	...	...	...	...	...	...	...	...	...
TOTALS	102 ½	82 ½	67	28 ½	63	5 ½	52 ½	3	16 ½	7 ½	7	63	6 ½	2 ½	13 ½

MAINTENANCE PROJECTS:

Forest	Houses	Cabins	Barns and Stables	Telephones	Trails	Roads	Fences	Grounds	Corrals	Water Supplies	Garages, Sheds, Etc.	Look-out Towers and Cabins	Hay Meadows & Pastures	Fertiles	Miscel- laneous
Cypress Hills	3	...	...	19 ½	95	96 ½	7	6	...	4	2	...	...	...	...
Crownest	159	26	7 ½	241	95	152	63	20	2	3 ½	16 ½	...	...	...	10 ½
Bow River	44	21	34	429	429	216 ½	216 ½	68 ½	14	18	12 ½	41	11	...	7 ½
Clearwater	27	56	2	75	472	2	111	...	...	16	10	...	...	9	...
Brazeau	21 ½	37	6	165 ½	357 ½	146	60	68	3	1 ½	1 ½	11	...	...	...
Athabaska	44 ½	28 ½	8	54 ½	342	...	48 ½	6 ½	...	23	...	...	...	...	4
TOTALS	299	168 ½	57 ½	555 ½	1695 ½	396 ½	506	169	19 ½	66	42 ½	52	11	9	22

NURSERY AND TREE DISTRIBUTION

Nursery.—Nursery operations at the Oliver Institute were continued on much the same lines as the preceding year but neither in the fall of 1935 nor the spring of 1936 was any nursery work attempted at the other establishments excepting at Lethbridge jail. Oliver is the point from which tree distribution is made and from which the subsidiary nurseries at Fort Saskatchewan, Ponoka and Lethbridge obtain their seedling supply.

Following is a statement of the seeding done at the Oliver nursery in the fall of 1935 and the spring of 1936:

7	lineal feet	European larch (<i>Larix europaea</i>).
6	"	Scotch pine (<i>Pinus sylvestris</i>).
165	"	Lodgepole pine (<i>Pinus murrayana</i>) 60%, 5 lbs.
48	"	Siberian larch (<i>Larix sibirica</i>) 24 oz.
35	"	White spruce (<i>Picea glauca</i>) 48%, 1 lb.
5	"	White spruce (<i>Picea glauca</i>) 36%, 2 oz.
51	"	White spruce (<i>Picea glauca</i>) 40%, 26 oz.
60	"	Red pine (<i>Pinus resinosa</i>) 30 oz.
9	"	Silver maple (<i>Acer saccharinum</i>).
17	"	Basswood (<i>Tilia americana</i>) 20 oz.
7	"	Lyall's larch (<i>Larix lyallii</i>) 4 oz.
		White elm (<i>Ulmus americana</i>) 42 oz.
		Green ash (<i>Fraxinus pennsylvanica</i>).

The last two named were planted in rows and the others in seed-beds. The unit of measurement is the lineal foot, which comprises a length of one foot in the seed-beds, which are four feet wide. One lineal foot is, therefore, equal to four square feet. A similar unit will be used to describe other stock in the seed-beds. Where possible, the germination percentages and weight of seed planted were noted and are given above. Circumstances sometimes made it impossible to obtain this data and the seeding statement is for that reason incomplete.

In the fall of 1935 and the spring of 1936 the following stock was removed from the seed-beds to the transplant beds:

7,335	White spruce (<i>Picea glauca</i>).
1,650	Scotch pine (<i>Pinus sylvestris</i>).
13,800	Nordman fir (<i>Abies nordmanniana</i>).

It is estimated that the following stock at Oliver will be ready for transplanting in the fall of 1936:

129,000	White spruce (<i>Picea glauca</i>).
2,000	Siberian larch (<i>Larix sibirica</i>).
3,500	Douglas fir (<i>Pseudotsuga mucronata</i>).
10,000	Scotch pine (<i>Pinus sylvestris</i>).
4,500	Ladoga pine.
2,000	White elm (<i>Ulmus americana</i>).
6,000	White ash (<i>Fraxinus americana</i>).

In addition, there are 8,500 Green Ash which were seeded out in a row and which should, if possible, be transplanted.

Rabbits have been destructive to the trees set out along the highway between North Edmonton and Oliver and the casualties were replaced. The high mortality in the trees planted along this highway has resulted in the trees being of uneven ages, as replacements were made from year to year and the work done on this project does not by any means show all the results that could be desired.

The Forest Service sent two employees to assist with the tree planting programme at the Oliver School, which is situated on the Calgary highway. The soil around the outside part of the school grounds had been cultivated, but the cultivated areas were of varied width and it was not possible to make as complete and uniform a plantation as was desired. The trustees intend to cultivate a wider area in order that further planting may be done next year. The following were planted:

1,000	Laurel leaf willow (<i>Salix pentandra</i>).
67	White spruce (<i>Picea glauca</i>).
42	Russian Poplar (<i>Populus balsamifera</i>).
25	Green ash (<i>Fraxinus pennsylvanica</i>).

Up to the present success is attending the propagation of the following exotics, except where modifications are noted. In most instances, the stock reported on is quite young and the statements made at present are not by any means conclusive:

White pine (*Pinus strobus*).
 Austrian pine (*Pinus austriaca*).
 Scotch pine (*Pinus sylvestris*).
 English oak:—grows well each year, but winter-kills.
 English walnut (*Juglans regia*); alive but winter-kills.
 English hawthorn; winter-kills.
 Juniper (*Juniperus*).
 Western Red Cedar (*Thuja plicata*).
 Redwood (*Sequoia sempervirens*).
 Satalpa; killed back a little.
 Silver maple (*Acer saccharinum*).
 Black walnut (*Juglans nigra*); growing, but killed back a little.
 White ash (*Fraxinus americana*).
 Butternut (*Juglans cinerea*); tip-killed.
 Colorado blue spruce (*Picea pungens*).
 Koster blue spruce (*Picea pungens glauca*).
 White oak (*Quercus alba*).
 Sugar maple (*Acer saccharum*).
 Peach-leaved willow (*Salix amygdaloides*).
 Red oak (*Quercus rubra*).
 Filberts (*Hamamelis*).
 Bur oak (*Quercus macrocarpa*).
 Beech (*Fagus grandifolia*); winter-killing.
 Colorado green spruce (*Picea pungens viridis*).
 Basswood (*Tilia americana*).
 Siberian larch (*Larix sibirica*).
 Horse chestnut (*Aesculus hippocastanum*).

Tree Distribution.—Following is a statement of the transplants, cuttings and seedlings distributed to applicants from Oliver in the spring of 1936:

<i>Transplants:</i>		
White spruce (<i>Picea glauca</i>)	28,857	
Lodgepole pine (<i>Pinus murrayana</i>)	20,688	
Scotch pine (<i>Pinus sylvestris</i>)	6,467	
Jack pine (<i>Pinus banksiana</i>)	3,515	
Green ash (<i>Fraxinus pennsylvanica</i>)	15,129	
White elm (<i>Ulmus americana</i>)	4,026	
Red pine (<i>Pinus resinosa</i>)	200	
Bur oak (<i>Quercus macrocarpa</i>)	149	
Western yellow pine (<i>Pinus ponderosa</i>)	200	
		79,231
<i>Cuttings:</i>		
Russian poplar (<i>Populus balsamifera</i>)	8,295	
Golden willow (<i>Salix vitellina</i>)	5,400	
Laurel leaf willow (<i>Salix pentandra</i>)	3,800	
		17,495
<i>Seedlings:</i>		
Siberian larch (<i>Larix sibirica</i>)	12	
White elm (<i>Ulmus americana</i>)	7,500	
Red oak (<i>Quercus rubra</i>)	1,105	
Bur oak (<i>Quercus macrocarpa</i>)	50	
		8,667
TOTAL		105,393

An area of the transplant beds was flooded which prevented the removal of all the green ash and white elm required. As a consequence it was not possible to send these species to all the applicants to whom they had been promised. Drainage for the low land was provided by the use of a crew of unemployed from Edmonton and recurrence of the flooding in future years is not anticipated.

Some ornamental trees were available for provincial institutions and of the following which were sent out the greater portion was used on the grounds of the Mental Hospital at Ponoka:

347 Colorado blue spruce (*Picea pungens*).
 239 Mountain ash (*Pyrus americana*).
 398 Lilac (*Syringa japonica*).
 230 Buckthorn (*Rhamnus*).
 63 Honeysuckle (*Lonicera ciliolata*).
 255 Cotonaster (*Acutifolia*).
 6 Ginnaliam maple (*Acer ginnala*).
 15 Dogwood (*Cornus pubescens*).
 3 Native hawthorn (*Crataegus*).
 6 Ash-leaved spirea (*Sorbaria sorbifolia*).
 31 Plum (*Prunus nigra*).
 50 Wild wolf willow (*Elaeagnus argentea*).

A total of 259 applications was approved, of which 223 were for individuals, 23 for schools and 13 for institutions. In only one instance was it reported that the applicant did not call at the express office for his trees and as in previous years the railway company was instructed to give the trees to anyone who would pay the express charges.

It is estimated that the following will be in condition for distribution in 1937:

- 1,000 Siberian larch (*Larix sibirica*) (2-0).
- 1,775 Mountain ash (*Pyrus americana*).
- 4,000 White spruce (*Picea glauca*) (2-3).
- 3,600 Scotch pine (*Pinus sylvestris*) (2-1).
- 59,320 Lodgepole pine (*Pinus murrayana*) (2-2 and 1-3).
- 9,720 Green ash (*Fraxinus pennsylvanica*).
- 200 Red oak (*Quercus rubra*) (2-1).
- 3,000 White elm (*Ulmus americana*) (1-2).

The following will be ready for distribution in 1937, but may be held over without harm if there is no demand for them:

- 12,000 Lodgepole pine (*Pinus murrayana*) (2-2).
- 2,000 Scotch pine (*Pinus sylvestris*) (2-1).
- 250 Birch (*Betula alba*).
- 400 White spruce (*Picea glauca*).

Note: The figures in brackets show the ages of the species named. The first figure represents the number of years the stock has been in the seed-beds, the second the number of years in the transplant beds.

Bur oak, red oak and green ash have been seeded out in rows and are now showing very good growth. The present numbers of these are:

- 15,000 Bur oak (*Quercus macrocarpa*).
- 5,000 Red oak (*Quercus rubra*).
- 8,500 Green ash (*Fraxinus pennsylvanica*).

It is planned to send out some of the oak for trial in 1937.

It will be necessary to take into consideration for next year the fact that much of the stock at the nurseries at Ponoka, Fort Saskatchewan and Lethbridge will be ready to be given out. Past experience has shown that when the stock is carried over too long it gains too much in growth and is very heavy and awkward to handle. The work of shipping is slowed up very considerably and although the recipient is given larger transplants, he has to pay heavy express charges and the Forest Service has to pay more for trucking, for parcelling supplies and for labour than if smaller transplants were handled.

It is important that the advertising of stock should be attended to in the near future in order that the applicants may have ample time to place their requests for consideration.

Complaints have been received that some of the trees were sent out so late in the spring that they were budded out and many died in transplanting. As was the case in the previous year, assembling and parcelling the trees for shipment took a great deal of time and the applicants dealt with near the last were given trees that were not in the best of condition for transplanting. The remedy for this is to make better speed on the shipping and to do this it is vital that more space be provided and more tables for parcelling be put into use.

The quarters used for this work at present are much too confined and are not very well lighted. Lack of speed at the critical time results in high mortality in the transplants and, to a certain extent, a waste of the other efforts in nursery work. Besides this, when so much time is taken up in shipping work, it is not possible to accomplish much transplanting within the nursery in the early spring.

PUBLICITY

The situation with respect to publicity given to forest protection and fire prevention is the same as previously reported.

It is not in the best interests of protection of the timber resource and as soon as possible means should be found to greatly enlarge the effort made in this connection. It has been noted that in general the public is favourably disposed towards accepting the principle that greater care on the part of everyone is an absolute necessity in the interests of conservation of the forest resources of this Province. With the public in this mood it is believed that the proper time has arrived to enter upon a suitable programme of publicity which would be mainly in the form of informative articles of educational value.

It is regrettable to note that the principal publicity appearing through the press is that which arises as a result of the presence of destructive fires. The same amount of publicity directed towards prevention, appearing at the proper season, would have a very beneficial effect.

This publicity should cover the inter-related resources of forests, game, fur producers and fish.

Public Relations.—Public relations of the Forest Service both in the field and in the office with respect to forest administration matters and forest protection appear to be on a very satisfactory footing. The effort on the part of all Forestry officials is one of co-operation with the public and every endeavour is made to assist with a general view of establishing a better understanding on the part of all concerned.

MILEAGE TRAVELLED BY EMPLOYEES OF THE ALBERTA FOREST SERVICE

FISCAL YEAR 1935-36

Divisions	Foot	Saddle	Driving	Speeder	Auto	Canoe	Rowboat	Motorboat	Railway	Rate	Dogteam	Total
Northern Alberta Forest District (Fire Rangers)	15,704	36,552	5,637	11,989	10,917	6,353	149	4,340	2,141	262	.....	94,044
Northern Alberta Forest District (Timber Inspectors)	3,813	1,051	5,189	4,079	64,105	343	59	1,009	16,819	.....	45	96,512
Crowsnest-Bow River Forest	2,028	36,897	2,882	.....	32,523	.....	.....	.....	160	.....	.....	74,490
Clearwater Forest	2,360	13,428	1,805	1,396	8,513	.....	47	.....	564	.....	.....	28,113
Brazzau-Athabaska Forest	2,198	13,675	.....	4,735	1,236	.....	.....	.....	519	.....	.....	22,363
TOTALS	26,103	101,603	15,513	22,199	117,294	6,696	255	5,349	20,203	262	45	315,522

Fisheries

REPORT OF THE DIRECTOR OF FISHERIES, R. T. RODD

A review of the fiscal year ending March 31st, 1936 will demonstrate the fact that exportation of marketable fish produced in the Province still continues on the upgrade. While prices were not all that might be desired for the summer-caught product, little difficulty was experienced in marketing Alberta fish during this period. A drop in production in the other western provinces had a steadying effect on prices to producers and dealers, especially toward the end of the winter season.

It cannot be gainsaid that with careful attention to handling and packing the export market can readily absorb the available quantity of fish produced from the various Alberta lakes. On the other hand it is recognized that with present unemployment, illegal practices are more prevalent than heretofore. Many farmers, incidentally, have taken up fishing in the hope of earning money to assist in farming operations and to make living expenses, increasing thereby the difficulties of regular fishermen who for years have made fishing a vocation. In view of the fact that the poundage of commercial fish is limited on all such classes of lakes, a large number of itinerant fishermen operating tends to reduce the per capita catch to the genuine fisherman.

Angling in the period under review was reported as excellent in some districts to fair in streams overfished and easily accessible. Losses were reported through the freezing of some streams in low water conditions during the winter.

Further particulars are itemized under separate headings and are as follows:

COMMERCIAL FISHING

The period under review exhibits a total catch of 4,921,542 pounds, an increase of 862,106 pounds over the previous year. The value of the year's catch to fishermen was \$200,394.00, an increase of \$55,204.46 and the value as marketed was \$287,726.00, an increase of \$43,655.23.

Production of whitefish, lake trout, pike, tullibee, sucker, ling, goldeye and mullet shows an increase, but pickerel and perch a decrease.

A large quantity of new netting was purchased during the year, the greater part of which was obtained by fishermen operating for the first time. Many of those who fished during the previous year continued to operate with old nets and other necessary gear. Pedlars were active and some new trucks were purchased for hauling fish to local markets, which throughout Alberta were well stocked during the open season with reasonable prices prevailing.

Lesser Slave Lake.—The summer season was not a very satisfactory one. Markets were poor, due to heavy production in other provinces, and flood conditions were so bad that many fishermen were forced to give up fishing. With a higher water level whitefish spread throughout the lake and were difficult to find on the usual grounds. A total reduction of fish to the amount of 444,468 pounds for summer fishing is recorded, and reflected in the lower earning to the fishermen by \$11,000.00 and \$28,000.00 in the marketed value.

The December fishing period records a slight reduction of approximately 7,000 pounds and a correspondingly smaller value to fishermen and as marketed.

The January-March, 1936 period also shows a decrease of 92,260 pounds and a reduction in value to fishermen of approximately \$1,000 and \$4,000 as marketed. Many small whitefish in increasingly large numbers were reported by fishermen and operators evidencing gradual recovery due possibly to stocking from the hatchery. As a result of abnormal conditions, a fair comparison with the year previous is almost impossible but the many reports received are crowning proof of better fishing prospects on the lake.

Lac la Biche.—Summer operations, it will be noticed, report an increase of 316,591 pounds due chiefly to a great catch of the coarser varieties, namely pickerel, pike and tullibee, with only slightly higher value to the fishermen as marketed. The removal of the coarser varieties will improve the lake for the more valuable whitefish, which exhibit a slight decrease. The number of fishermen operating shows an increase of three over last year's total.

An increase is also reported for the December catch of 49,325 pounds. All varieties were included in this increase. Prices were fair and some difficulty was evidenced in marketing the large number of tullibee. This variety is not popular on local markets unless it is filleted and is practically unexportable.

January-March period shows a large increase over the similar period of the previous year, namely 123,583 pounds of all varieties, but chiefly pike and tullibee. Prices for these varieties were only fair, hence value to fishermen resulted in a small gain of approximately \$2,000.00 and as marketed, approximately \$1,900.00. Fishermen in this district also carried on operations over different periods at Beaver, Blackett, Elinor, Frenchman, Ironwood, Jackson and Kinnaird lakes. In addition to these Heart Lake in the Lac la Biche district was reopened and reported a gain, which was largely pickerel, of 45,738 pounds. Good prices were obtained for the lake products, resulting in a gain to the fishermen of the district of \$3,132.00 as well as there being an increase in the value as marketed. Mosquito Lake produced 15,815 pounds of Jumbo whitefish. The catch was made by three fishermen and sold for \$1,494.00, export being arranged through Lac la Biche operators.

Cold Lake.—Commercial fishing in this lake is permissible during the winter only, the summer season being reserved for angling and domestic fishing.

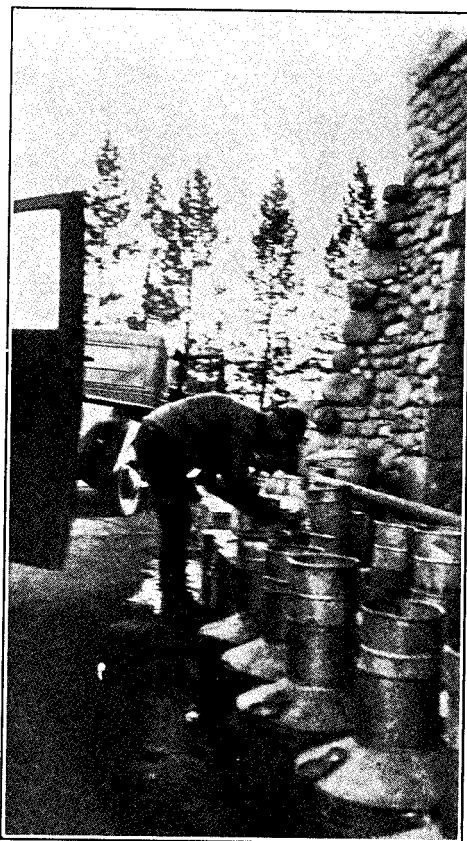
A large increase of 77,102 pounds of trout and whitefish is recorded for December with corresponding increases in values to fishermen and as marketed. Fifty-six more fishermen were granted licenses during this year. Fishing was good and prices steady, a large portion of the trout being disposed of throughout Alberta. The period of January to March, 1936 showed little change in the amount of fishing, a small decrease of approximately 6,172 pounds being reported. In conjunction with Cold Lake, Primrose Lake was fished during the winter, and reported a decrease of approximately 9,481 pounds.

Big Whitefish Lake and Little Whitefish Lake, No. 2.—These now important lakes continue to provide excellent catches, contributing a reasonable return to the Lesser Slave Lake fishermen, who operate during December. A total of 62,445 pounds, mostly whitefish, was produced over last year's quantity and good prices were obtained by fishermen and operators. In addition to being of importance from a commercial standpoint, these lakes are valuable fishing spots to the population whose residences are found to be in close proximity and especially important as a spawn collecting station for the whitefish hatchery at Canyon Creek.

Pigeon Lake.—Due to the desire on the part of fishermen to obtain better prices, the open season on this lake was again delayed until January. The same

condition as last year applied as to length of net allowed, namely 100 yards per license. The number of licenses applied for totalled 284, a reduction of ninety. Extremely cold weather coupled with the previous season's overfishing reflected adversely on the situation this year in comparison with previous years. A reduction in catch of 47,489 pounds of whitefish was reported but the per capita payment to fishermen on this product was somewhat better. The value of the reduction, however, was computed to be only approximately \$2,660.00. Weather conditions did not interfere unduly with the marketing of fresh whitefish and very little of the frozen product was sold. With present regulations in force heavy fishing is impossible and markets are closely watched to prevent a glut. Indian and domestic fishing continued heavily during the summer months and with the large number of fishermen operating, the lake is unable to stand the drain and consequently is a source of worry.

Winnifred Lake.—Fishing did not materialize during December, markets being too uncertain for this far-off lake and fishermen were generally busy on other lakes. The January to March period provided employment for twelve men and the total catch of all species amounted to 105,100 pounds with good prices prevailing. The total catch for this period exceeded that of the year previous by approximately 6,000 pounds.



Icing rainbow fry containers at Jasper

Wabamun Lake.—This lake continues to provide splendid fishing throughout the entire year; 399,290 pounds of fish were produced, an increase of 86,638 pounds, with 501 men fishing. Heavy runs of whitefish throughout all periods were the rule. The fish caught are easily marketed at good prices.

A large increase of approximately 256 more licenses was evidenced, and though there was a reduction of yardage to 100 yards per license the total used amounted to practically the same as in the year previous. Due to good prices, heavy catches per net and proximity to local markets much difficulty has been experienced in preventing illegal practices, and it was necessary on occasion to transfer other Fisheries inspectors to assist the resident inspector in controlling the situation. Considerable latitude was given the representation of fishermen's societies in the district to provide work and wages during unemployed periods and the Fisheries Service gave reasonable requests every consideration possible, whilst urging the necessity for careful observance of conservation and protective measures. The remarkable catches obtained, the average size of the whitefish caught and the innumerable small fry seen give every reason for believing that in spite of heavy production the lake is still in a very healthy condition.

Calling Lake.—Fishing on this lake was pronounced fair only to the 47 fishermen operating during December. A total amount of 130,050 pounds of all species was shipped, as against 123,950 pounds with 32 operating the year previous. For short periods planes were used to bring the product out in a fresh state to Athabaska. A fairly large increase is recorded in the fishing period from January to March, a total amount of 64,000 pounds of all kinds being taken as against 16,500 for the same period the year previous. This lake is the largest producer in the Athabaska district and in providing good fishing during the off winter season for the unemployed is valuable from this standpoint. The district in question is poorly settled.

General.—It is interesting to note that Lake Newell, stocked in 1932 with eyed whitefish spawn from the Whitefish Lakes, and containing no whitefish previous to this, was opened for the fishing of a limited amount of this species during March. A total catch of 7,126 pounds was marketed throughout southern Alberta. This is the first instance of whitefish being marketed from a local lake nearer than Pigeon Lake. It is extremely gratifying that the result of this experimental stocking should be apparent so early.

Many other lakes were fished commercially with minor catches being obtained. Some of these lakes supply small towns in the vicinity in addition to the many fur farms now in operation, the latter representing an increasing market for coarser varieties of fish.

Lakes distant from the railway, after being untouched for several years, were also fished during this period. This was unquestionably due to the much better prices which were available.

Equipment.—New equipment was purchased by fishermen operating for the first time and replacements of worn-out equipment were made by fishermen who had operated in previous years. Planes were used from the far-off lakes during the latter part of the winter but poor flying weather interfered in the movement, one plane being partially wrecked and another totally destroyed in the Lesser Slave Lake district.

Markets.—Markets which prevailed during the summer season and part of December were fair only, the returns in consequence being small to both producers and operators. The latter part of the summer, however, reported an improvement for a short period.

Unusually good market conditions were evidenced from the beginning of February to the end of March and all classes of fish were readily disposed of. Close co-operation of the operators and the Fisheries prevailed during the entire year with regard to market conditions and limitations were extended when warranted with satisfactory results to both fishermen and the trade. On the whole it can be said that market conditions were for the most part satisfactory.

Transportation.—The winter of 1935-36 was notable for its depth of snow and subzero weather, which seriously affected the transport of fish to markets, making the use of planes necessary in many cases to transport products from far-off lakes to steel. Wherever possible nearly all of the commercial lakes were fished. Lakes Namur and Legend offered the operating company some difficulty in marketing the fish in a fresh state, due to the difficult terrain in which they are situated. The difference in price in marketing fresh and frozen fish sometimes creates unprofitable marketing for the latter. Nearly all operating companies are therefore anxious that road conditions and transportation facilities are good before distant lakes are fished. The co-operation which existed between railway and other transportation companies and the operators and fishermen, with a view to quick marketing of the product, was extremely satisfactory and effective.

Domestic Fishing.—A significant feature of domestic fishing has been the difficulty arising from the desire on the part of some who took part in it to add to their commercial catch by this method. Control was difficult and in order to ease the situation domestic fishing was refused during the commercial season especially on Wabamun lake and Lac Ste. Anne. Domestic fishing for family use continues to be popular at Lac Ste. Anne, Lac la Nonne, Chin Lakes and Lakes Floating Stone, Pigeon, Buffalo and Buck—the last named being situated in township 46, range 6, west of the 5th meridian—which provided the chief source of supply. The total amount produced under domestic fishing for the year ending March 31st, 1936 was 616,490 pounds with an estimated valu-

DEPARTMENT OF LANDS AND MINES

TOTAL AMOUNT OF FISH TAKEN FOR COMMERCIAL PURPOSES

Classification	Period	Weight (lbs.)	Value to Fishermen	Value as Marketed
WHITEFISH	May 16/35 to Sept. 30/35	738,764	\$ 37,907.00	\$ 64,488.00
	Dec. 1/35 to Dec. 31/35	542,806	20,855.00	37,896.00
	Jan. 1/36 to March 31/36	908,155	81,333.00	100,929.00
		2,189,725	\$140,095.00	\$203,313.00
LAKE TROUT	May 16/35 to Sept. 30/35	30,639	\$ 1,531.00	\$ 2,451.00
	Dec. 1/35 to Dec. 31/35	73,003	4,011.00	6,531.00
	Jan. 1/36 to March 31/36	103,642	\$ 5,024.00	\$ 8,982.00
PIKE	May 16/35 to Sept. 30/35	462,247	2,879.00	5,337.00
	Dec. 1/35 to Dec. 31/35	188,206	8,242.00	3,874.00
	Jan. 1/36 to March 31/36	397,069	\$ 9,093.00	8,612.00
		1,047,522	16,145.00	17,823.00
PICKEREL	May 16/35 to Sept. 30/35	331,809	2,512.00	\$ 17,835.00
	Dec. 1/35 to Dec. 31/35	85,279	12,014.00	4,181.00
	Jan. 1/36 to March 31/36	177,052	\$ 4,723.00	14,641.00
		594,140	1,174.00	\$ 8,587.00
TULLIBEE	May 16/35 to Sept. 30/35	311,766	2,846.00	1,960.00
	Dec. 1/35 to Dec. 31/35	88,925	\$ 1,031.00	3,195.00
	Jan. 1/36 to March 31/36	167,634	3,459.00	3,674.00
		568,325	8,743.00	13,742.00
PERCH	May 16/35 to Sept. 30/35	42,440	\$ 1,031.00	\$ 1,657.00
	Dec. 1/35 to Dec. 31/35	3,050	177.00	275.00
	Jan. 1/36 to March 31/36	56,509	3,459.00	3,674.00
		101,999	4,667.00	5,606.00
SUCKER	May 16/35 to Sept. 30/35	187,309	\$ 681.00	\$ 701.00
	Dec. 1/35 to Dec. 31/35	28,915	172.00	172.00
	Jan. 1/36 to March 31/36	99,965	730.00	730.00
		316,189	1,583.00	1,603.00
TOTALS		4,921,542	\$200,394.00	\$287,726.00
			\$200,394.00	\$287,726.00

The following tables show the amount of fish exported from Alberta during the past year to various eastern markets:—
FISH SHIPPED DURING THE SUMMER SEASON OF 1935

Destination	Trout, lbs.	Whitefish, lbs.	Pickarel, lbs.	Pike, lbs.	Perch, lbs.	Tullibee, lbs.	Pickarel Fillets, lbs.	Total lbs.
Chicago	291,180	204,800	.....	14,250	39,750	.....	549,980
New York	280,500	179,000	.....	25,050	24,800	.....	509,350
TOTALS.....	571,680	383,800	.....	39,300	64,550	.....	1,059,330

FISH SHIPPED DURING THE WINTER SEASON OF 1935-36

Chicago	51,680	553,534	63,238	93,450	7,700	7,200	.....	776,802
New York	12,700	724,725	147,950	189,500	53,780	41,341	.....	1,169,596
TOTALS.....	64,380	1,278,259	211,188	282,950	61,480	48,541	.....	1,946,798

FISH SHIPPED DURING THE FISCAL YEAR 1935-36

Summer Season .....	.....	571,680	383,800	.....	39,300	64,550	.....	1,059,330
Winter Season	64,380	1,278,259	211,188	282,950	61,480	48,541	.....	1,946,798
TOTALS.....	64,380	1,849,939	594,988	282,950	100,780	113,091	.....	3,006,128

NOTE: The total of 64,380 lbs. trout, as shown above, represents the amount exported from Cold Lake during the winter season from both Alberta and Saskatchewan portions of the lake. The total amount of whitefish and pickarel shipped during the winter season includes the fish taken from the Saskatchewan areas of Cold and Primrose lakes.

ation of \$33,694.00. A very slight decrease is indicated from that of the previous year. The number of domestic licenses issued was 622 or a decrease of 32.

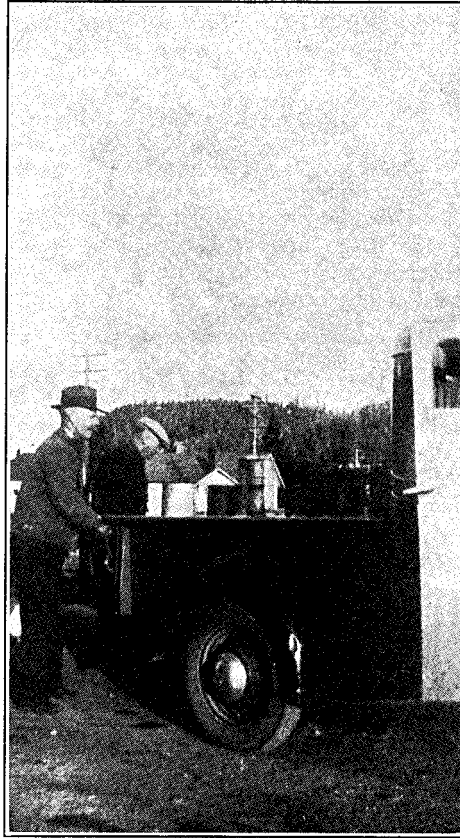
Indian Fishing.—Fishing permits issued to Indians during this period totalled 801, a decrease of 41. The estimated quantity of fish caught amounted to 834,650 pounds with an estimated value of \$42,971.00. This shows a decrease of 271,625 pounds and \$15,005.00. Indians, generally speaking, fish very spasmodically, their nets and equipment as a rule being poor, due no doubt to their inability to make new purchases. A number of Indians are now fishing commercially and in the interim do not fish for their own use, hence the reduction aforementioned.

Fiscal Year	LICENSES AND PERMITS ISSUED						Total
	*1930-31	1931-32	1932-33	1933-34	1934-35	1935-36	
Domestic licenses	566	555	458	508	654	622	3,363
Fishermen's and commercial licenses	1,033	755	598	746	1,296	1,741	6,169
Angling permits sold by Fisheries Division	7,731	6,533	4,963	4,823	5,015	4,562	33,627
Angling permits sold by Forestry Division .....	.....	566	478	397	475	363	2,279
Indian permits	1,130	736	860	910	842	801	5,279
Boat licenses .....	.....	.....	.....	.....	33	30	63
TOTALS	10,460	9,145	7,357	7,384	8,315	8,119	50,780

*Six months period.



Loading rainbow fry on to trucks at Jasper



Loading rainbow fry on to trucks at Jasper

Decreases are evident in a small degree in the issue of domestic, angling, Indian, boat and permit licenses, with a large increase, however, shown for fishermen's and commercial licenses.

LICENSES AND PERMITS, FISCAL YEAR 1935-36, IN COMPARISON WITH
PREVIOUS YEAR

	Decrease
Domestic licenses	32
Angling permits sold by Fisheries Division	453
Angling permits sold by Forestry Division	112
Indian permits	41
Boat licenses	3
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Less increase in fishermen's and commercial licences	641
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Net decrease.....	445
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	196
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Angling.—Reports indicate continued good fishing for trout in the Bow and Elbow as well as the Highwood rivers. Better than average angling also prevailed throughout the season at Cold Lake. Especially good fishing for Arctic grayling during the later summer months was obtained in the Macleod River and the few fishermen who ventured the Clearwater River near Fort McMurray secured excellent Arctic grayling catches. Reports from these anglers would indicate that this river is an ideal, sporting river, possessing rapids and deep clear pools with fish taking the fly readily.

Large specimens of rainbow were caught in the Bow and one authentic report from the Waterton Lake district revealed a 16 pound catch of this species. Rainbow trout from 3 to 6 pounds were frequently caught especially from the Bow below Carseland. The lake formed by the Glenmore dam is proving to be an ideal sanctuary for game fish.

It is of particular interest to note that Loch Leven trout, an imported species, are to be seen and caught in numbers throughout the Clearwater (Central Alberta) and the Red Deer watersheds. This game fish was introduced as an experiment some few years ago and has adapted itself remarkably well to the area mentioned. Fishermen claim that its sporting qualities are second to none and anticipate excellent fishing in these waters in the very near future.

The usual low water condition in some localities of the smaller mountain streams continues with detrimental effect to angling.

Fishing for coarser varieties such as pike, goldeye and pickerel is as popular as ever and reports indicate that good average catches were obtained throughout the Province. This is particularly true of the district north and west of Edmonton. The resorts around Pigeon, Sylvan, Pine and Wabamun lakes and Lac Ste. Anne report fair average catches throughout the summer and fall seasons.

FISH CAUGHT BY ANGLING, 1935-36

		Increases or decreases in comparison with previous year.	
Trout	255,520 lbs.	6,469 lbs.	decrease
Rocky Mountain whitefish	67,000 "	33,000 "	decrease
Arctic grayling	35,200 "	33,400 "	decrease
Goldeye	14,840 "	10,060 "	decrease
Pickerel	82,215 "	20,135 "	decrease
Perch	204,035 "	84,870 "	decrease
Pike	569,853 "	7,794 "	increase
TOTAL	1,228,663		

or a decrease in the aggregate of 180,140 lbs. on the year's angling operations. The total value of the catch was \$67,662.00.

Loss of Fish and Rescuing Fish.—Loss of fish was reported from several districts during the year due to drought conditions and consequent low water in many of the smaller Foothills streams. Heavy losses of trout took place in Big Stoney Creek, tributary of the Ghost River, and also in several tributaries of the Elbow, Fish Creek and Flat Creek, a tributary of the Highwood River. Losses were also reported in Pincher Creek and other small streams in the Crowsnest Pass. Streams, shallow from drought and freezing to the bottom during the winter months, were the cause.

Tributaries of Willow Creek and the Old Man River were also affected by drought during the summer months but losses in this area were very small due to these streams becoming shallow so gradually during this period that trout were able to move to safer localities as the water became low and warm. Loss of suckers and pike were also reported in the lower reaches of the Little Red Deer River and Dog Pound Creek.

The Fisheries officers reported the rescue of some 2,000 game fish, no effort being made, however, to save suckers and other undesirable species. Nothing could be done to prevent the losses occurring during the winter months.

It was found on investigation that one of the reasons for the protection of beaver in the Foothills and the forest reserves being very desirable was the fact that these animals by the erection of their dams create wonderful fish pools. Had it not been for beaver-dams on numerous small streams, the loss of trout

in some districts would have been very heavy, the only waters found suitable for fish life in many of these streams being in the dams.

Very heavy loss of perch occurred in Hastings Lake during the winter of 1934-35. This loss, obviously not apparent when taking place, could only be estimated after discovery in the spring when the ice disappeared from the lake. Hundreds of thousands of fish drifted on to the beaches, necessitating considerable work in their removal. The co-operation of the Health Department in this matter was greatly appreciated.

During the summer months considerable work was done by the Fisheries staff in clearing obstructions, making channels and otherwise improving conditions in the smaller streams. This work, which is necessary in certain areas, will be continued in the future.

Removal of Predaceous Fish.—The following predaceous fish were removed during the year from trout waters:

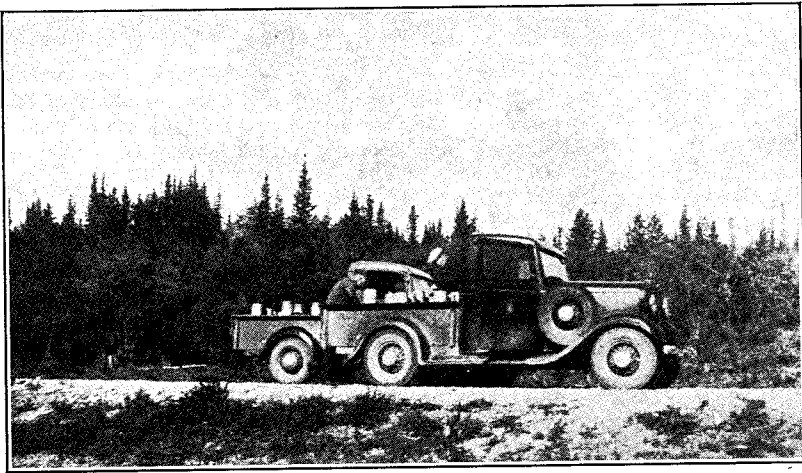
	Sucker	Pike	Ling	Dolly Varden Trout	Total
Willow Creek and tributaries.....	398	36	.....	19	452
Highwood River and tributaries	378	1	31	6	416
Bow River	2,050	2,850	.....	.....	4,900
Elbow River and tributaries.....	289	165	.....	.....	454
TOTAL.....					6,222

Observance of Regulations.—Throughout the period under review prosecutions numbered 66, an increase of 6, with confiscations totalling 126, an increase of 67. The increase of confiscations over the previous year was due mainly to a closer enforcement becoming effective at Lake Wabamun. Practices violating the regulations which included the bootlegging of illegally caught fish in this locality resulted in a much larger return of confiscated articles used for fishing.

When fish are easily procurable in large numbers, with attractive prices offered by the market, the confiscation of illegal apparatus is frequently in evidence. Inspectors and guardians were transferred to places where fishing was heavy and a close watch was at all times kept in those parts of the Province from which reports of such illegal practices were received. The following is a summary of prosecutions which materialized during the year:

Fishing without a license or permit	17
Excess yardage	8
Fishing in close season	8
Fishing with illegal apparatus	6
Purchasing fish when season closed and from closed waters	4
Small trout under minimum size in possession	4
Fishing in closed waters	4
Having no numbers on stakes and nets as provided	4
Netting of game fish	3
Operating a net illegally	2
Operating nets outside area provided	2
Excess of amount of fish over daily needs	1
Pollution of water	1
Refusing to obey written instructions re fishing	1
Illegal retention of live bait for game fish angling	1
TOTAL.....	66

Irrigation.—In only two of the 45 irrigation schemes in existence in the Province were complaints received regarding loss of fish, the chief one being the loss of whitefish in the irrigation canal flowing into and out of Lake Newell. Generally speaking it is not habitual for whitefish to leave a lake and enter streams. Therefore, not anticipating this occurring at Lake Newell where they were recently introduced, no precautions were taken to prevent them from entering the canal.



Re-icing rainbow fry containers en route to Edson

Whilst these numbers were reported to be large, they were not really lost, as settlers of the district were permitted to catch them for their own use. Precautions will be taken to prevent this occurrence in future.

The second complaint was from the United States Irrigation District. It was found on investigation, however, that the numbers entering the canal were small and it is doubtful whether the small losses occurring would warrant any great expense to prevent fish from making this entry. Further investigations will be carried out in connection with this complaint.

Two hundred and ninety-five applications to divert water for domestic and irrigation purposes were also dealt with during the year and as these applications were mostly for the right to dam coulees and non-perennial streams to conserve spring run-off and would not affect the fisheries, they were all approved.

Pollution of Streams.—The cause of the pollution complaint which arose from the Bow River east of Calgary has finally been determined and remedied. During the year no further complaints were received.

Several complaints of pollution from sawmills were received but no difficulty was experienced in dealing with them, with the exception of one where the offender was finally prosecuted. With the co-operation of the Health Department the control of sewage from towns and cities is rapidly being dealt with and fewer causes for complaint are being received annually.

FISH CULTURE

With the usual co-operation of the National Parks Branch and the Federal Department of Fisheries the work of fish culture was carried out successfully, although drought conditions in the southern part of the Province were again the cause of considerable worry. This particular menace necessitated much care being exercised in the selection of streams for stocking concerning which there would be a reasonable assurance of continued water supply throughout the year.

For the first time since the transfer of the resources to the Province this Department assumed the entire responsibility in procuring the necessary supply of eggs, no assistance being given by the Federal Government as in previous years. The practice hitherto has been for the authorities at Ottawa to arrange

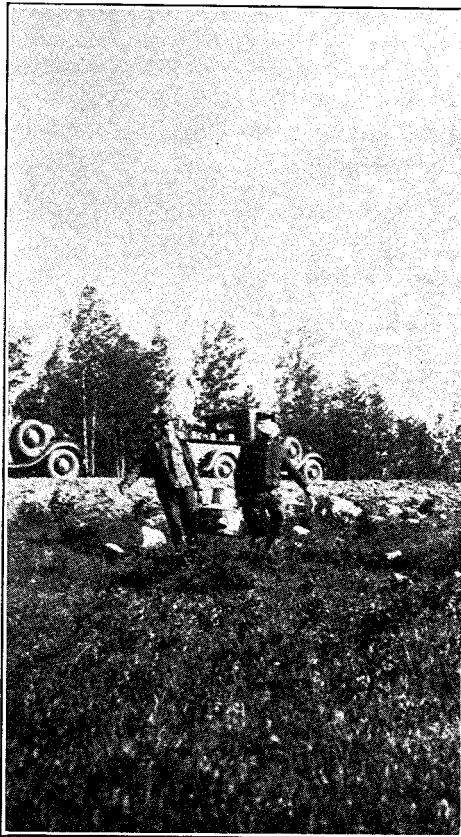
for an exchange of eggs with the United States Bureau of Fisheries, an arrangement by which this Province, and the national parks therein, benefited.

To be assured of the necessary supply of eggs for next season's hatching and re-stocking of streams, arrangements were made during the month of October, 1934 for delivery of eyed eggs to the game fish hatcheries in the following quantities:

To Waterton hatchery	900,000	Rainbow trout
.....	400,000	Cutthroat trout
To Banff hatchery	600,000	Speckled trout
.....	550,000	Rainbow trout
.....	475,000	Cutthroat trout
To Jasper hatchery	200,000	Rainbow trout
TOTAL.....	3,125,000	

Owing to the difficulty of obtaining Loch Leven or brown trout eggs for stocking in the tributaries of the Red Deer and the North Saskatchewan rivers as in past seasons, it was found necessary to order 500,000 speckled trout eggs for these waters in addition to 100,000 of the same species for planting at Cold Lake.

A total of 75,000 rainbow trout eggs was also ordered for delivery at the Banff hatchery for the purpose of stocking the Upper Kananaskis Lake, which was barren of fish. The speckled trout eggs were received in excellent condition



Carrying rainbow fry container to plant fish in Prairie Creek west of Edson

in December, 1934, the rainbow and cutthroat eggs arriving in good condition also in May and June of the following year. In addition to this supply 150,000 rainbow eggs were ordered for planting in the eyed stage in the upper reaches of Yarrow and Drywood creeks which contained no fish life, and 100,000 cutthroat for the tributaries of the upper Oldman River, which were also unproductive of fish.

In order to re-stock some of the larger rivers, the tributaries of which as already intimated had become dangerously low or had gone dry, it was considered advisable to raise a certain number of fry to a larger size in the hatchery before re-stocking these waters. For this purpose 40,000 were placed in the outside ponds at the Waterton hatchery and fed from eleven to fifteen weeks until they had attained a length of from two and a half to three inches. In addition to the extra expense of feeding, the costs in connection with this form of distribution are much greater than in planting younger and smaller fry.

Only a very few of the larger fish can be handled in each container and then only for short distances where there is no delay in reaching waters to be stocked.

The number of plantings during the year from the Waterton hatchery into provincial waters was 70 as compared with 72 of the previous year. The plantings from the Banff hatchery totalled 93 as compared with 96 of the previous year, whilst the plantings from the Jasper hatchery numbered 23, an increase of 12 in comparison with last year's total. The number of eyed eggs, fry and fingerlings distributed in waters outside the national parks show a total of 2,555,986, an increase of 194,121 over the previous year.

Details of the distribution from the various hatcheries into waters outside the national parks are as follows:

WATERTON RAINBOW TROUT				
Name of Waters	Eyed Eggs	Advanced Fry	Fingerlings No. 1	Fingerlings No. 2
Tributaries to Waterton River:				
Yarrow Creek	52,214	.....	.....	3,000
Drywood Creek	63,820	.....	20,000	3,000
Carpenter Creek	25,000	.....
Cottonwood Creek	15,000	.....
Spring Creek	15,000	.....
Elroy Creek	5,000	.....
Trail Creek	3,760
Tributaries to Oldman River:				
Pincher Creek	30,000	.....
Tributaries to Castle River:				
Mill Creek	25,000	4,000
Gladston Creek	10,000	3,400
Carbondale River	20,000	12,000
Lynx River	10,000	4,000
Beaver dams (sec. 10, t. 5, r. 3, w5m)	3,000
Beaver dams (sec. 27, t. 4, r. 3, w5m)	14,500	.....
Beaver Lake	20,000	.....
Webb Creek	5,000	.....
Unnamed creek (sec. 7, t. 6, r. 3, w5m)	5,000	.....
Unnamed creek (sec. 7, t. 5, r. 3, w5m)	5,000	.....
Gravenstafle	5,000	.....
West Branch of Castle River	20,000	.....
Beavermines Creek	35,000	.....
Tributaries to Crowsnest River:				
Crowsnest Lake	40,000	.....	3,000
Blairmore Creek	20,000	.....
Gold Creek	15,000	.....
Star Creek	5,000	.....
Byron Creek	15,000	.....
Rock Creek	15,000	.....

Tributaries to Willow Creek:			
North Fork Willow Creek .....	.....	20,000	.....
Johnston Creek .....	.....	15,000	.....
Patterson Creek .....	.....	5,000	.....
Burke Creek .....	.....	10,000	.....
Trout Creek .....	.....	15,000	.....
One Day Coulee Creek .....	.....	5,000	.....
Lyndon Creek .....	.....	15,000	.....
Burton Creek .....	.....	10,000	.....
Langford Creek .....	.....	10,000	.....
Chaffen Creek	10,000	.....	.....
Westrup Creek	7,500	.....	.....
Nelson Creek	7,500	.....	.....
Riley Creek	5,000	.....	.....
TOTALS	116,034	70,000	459,500
			39,160

CUTTHROAT TROUT

Name of Waters	Advanced Fry	Fingerlings No. 1	Fingerlings No. 2
Tributaries of Oldman River:			
Beaver Creek	20,000	.....	.....
Five Mile Creek	10,000	.....	.....
Station Creek	5,000	.....
Ernst Creek	5,000	.....
Gap Beaver Dams	20,000	.....
Heath Creek	15,000	.....
Olin Creek	10,000	.....
Racehorse Creek	25,000	.....
Unnamed creek (sec. 30, t. 10, r. 3, w5m)	5,000	.....
Unnamed creek (sec. 29, t. 10, r. 3, w5m)	6,000	.....
Sharples Creek	15,000	.....
Damon Creek	5,000	.....
North Creek	5,000	.....
Adair Creek	10,000	.....
Mead Creek	5,230	.....
Callum Creek	25,000	.....
Tributaries of Livingstone River:			
Twin Creek	10,000	.....
Coat Creek	10,000	.....
Unnamed creek (sec. 36, t. 12, r. 4, w5m)	5,000	.....
Rifle Creek	10,000	.....
Tributaries of St. Mary's River:			
Lee Creek	25,000	.....
Tough Creek	25,000	.....
TOTALS	30,000	241,230	.....

BANFF

RAINBOW TROUT

Tributary to Bow River:			
Upper Kananaskis Lake	75,000	.....	.....
Tributaries to Sheep Creek:			
King Creek	5,000	.....	.....
Fisher Creek	15,000	.....	.....
Ware Creek	10,000	.....	.....
North Sheep Creek	10,000	.....	.....
Canyon Creek	5,000	.....	.....
Gorge Creek	10,000	.....	.....
Junction Creek	20,000	.....	.....
Blue Rock Creek	5,000	.....	.....
South Sheep Creek	20,000	.....	.....
Tributaries to Highwood River:			
Flat Creek	20,000	.....	.....
Sullivan Creek	20,000	.....	.....
Ings Creek	1,000	.....	.....
Spring Creek	10,000	.....	.....
Greenfeed Creek	10,000	.....	.....
Salt Creek	10,000	.....	.....
Etherington Creek	20,000	.....	.....
Cataract Creek	20,000	.....	.....
Pekisko Creek	10,000	.....	.....
Tributaries to Elbow River:			
Stringer Creek .....	.....	10,000	.....
Rennick Creek .....	.....	10,000	.....
Young Creek No. 1 .....	.....	5,000	.....
Young Creek No. 2 .....	.....	5,000	.....
Mays Creek .....	.....	10,000	.....
Bragg Creek .....	.....	40,000	.....
Mickle Creek .....	.....	5,000	.....
Lott's Creek .....	.....	5,000	.....
Mays Creek .....	.....	5,000	.....

Name of Waters	Advanced Fry	Fingerlings No. 1	Fingerlings No. 2
Pirmez Creek	15,000	.....
Robinson Creek	5,000	.....
Thomas Creek	5,270	.....
Sylvester Creek	10,500	.....
Hidden Creek	5,250	.....
Ranger Creek	10,500	.....
Crawford Creek	5,000	.....
TOTALS	296,000	151,520	.....

SPECKLED TROUT FRY

Tributary to Beaver River:			
Cold Lake	85,000	.....	.....
Tributaries to Red Deer River:			
Gibson Creek .....	.....	7,500	.....
Twin Spring .....	.....	5,000	.....
Waltermeyer Creek .....	.....	2,500	.....
Stever Creek .....	.....	10,000	.....
Spring Creek .....	.....	15,000	.....
Sanford Creek .....	.....	7,500	.....
Spring Creek No. 1 .....	.....	10,000	.....
Spring Creek No. 2 .....	.....	5,000	.....
Spring Creek No. 3 .....	.....	10,000	.....
Spring Creek No. 4 .....	.....	7,500	.....
Dennison Creek .....	.....	15,000	.....
Grant Creek .....	.....	20,000	.....
Gastle Creek .....	.....	5,000	.....
Little Beaver .....	.....	5,000	.....
Griswald Creek .....	.....	5,000	.....
West Stoney Creek .....	.....	20,000	.....
East Stoney Creek .....	.....	5,000	.....
Purcell Spring Creek .....	.....	5,000	.....
East Stoney Creek .....	.....	20,000	.....
Beaver Creek .....	.....	15,000	.....
Stauffer Creek .....	.....	.....	15,000
Crooked Creek .....	.....	.....	20,000
Williams Creek .....	.....	.....	40,000
Fallen Timber Creek .....	.....	.....	12,500
Little Red Deer River .....	.....	.....	12,500
South Raven Creek .....	.....	35,000	.....
Tributaries to Clearwater River:			
South Prairie Creek .....	.....	.....	30,000
Moose Creek .....	.....	.....	10,000
North Prairie Creek .....	.....	.....	30,000
Cold Creek .....	.....	.....	10,000
Clear Creek .....	.....	.....	5,000
Tributaries to Baptiste River:			
Chambers Creek .....	.....	.....	40,000
Lawrence Creek .....	.....	.....	10,000
Ruth Creek .....	.....	.....	20,000
TOTALS	85,000	230,000	255,000

CUTTHROAT TROUT

Tributaries to Bow River:			
Bear Creek .....	.....	10,000	.....
Exshaw Lake .....	.....	40,000	.....
Policeman Creek .....	.....	20,000	.....
Gap Creek .....	.....	5,000	.....
Jumping Pound Creek .....	.....	10,000	.....
Spring Creek .....	.....	5,000	.....
Backwater Creek .....	.....	5,000	.....
Coxcomb Creek .....	.....	10,000	.....
Muskeg Creek .....	.....	5,000	.....
Lake Creek .....	.....	20,000	.....
Spencer Creek .....	.....	10,000	.....
Big Hill Creek .....	.....	30,000	.....
Ghost Lake .....	.....	40,000	.....
Ghost Lake .....	.....	30,000	.....
Cold Creek .....	.....	20,000	.....
Bowfort Creek .....	.....	10,000	.....
Ghost Lake .....	.....	40,200	.....
Sibbald Creek .....	.....	20,000	.....
Moose Creek .....	.....	10,000	.....
Tributary to Elbow River:			
McLean Creek .....	.....	10,000	.....
Tributaries to Ghost River:			
Haymeadow Creek .....	.....	35,000	.....
Eau Clair Creek .....	.....	30,000	.....
Muskeg Creek .....	.....	10,000	.....
TOTALS .....	.....	425,200	.....

JASPER
RAINBOW TROUT

Name of Waters	Advanced Fry	Fingerlings No. 1	Fingerlings No. 2
Sansell Lake (s.w. ¼, sec. 8, t. 53, r. 19, w5m), No outlet	10,000	.....	.....
Deacon Lake (sec. 9, t. 53, r. 15, w5m), No outlet	10,000	.....	.....
Reflection Lake (sec. 22, t. 54, r. 16, w5m), No outlet	10,000	.....	.....
Tributaries to McLeod River:			
Sundance Creek	10,000	.....	.....
Mercoal Creek	5,000	.....	.....
Unnamed Creek (Mile 45)	5,000	.....	.....
Whitehorse Creek	10,000	.....	.....
Prospect Creek	5,000	.....	.....
Tye Creek	5,000	.....	.....
McKenzie Creek	5,000	.....	.....
Watson Creek	4,000	.....	.....
Beaver dams (near Cadomin)	4,000	.....	.....
Mary Gregg Lake	10,000	.....	.....
Berry's Creek	4,342	.....	.....
Tributary to Sundance River:			
Horse Creek	10,000	.....	.....
Tributaries to Embarras River:			
Byron Creek	5,000	.....	.....
Chance Creek	5,000	.....	.....
Middle fork, Embarras River	5,000	.....	.....
Dummy Creek	5,000	.....	.....
Erith Creek	10,000	.....	.....
Tributaries to Pembina River:			
Centre Creek	10,000	.....	.....
Little Pembina River	5,000	.....	.....
Crooked Creek	5,000	.....	.....
TOTALS	157,342	.....	.....

RECAPITULATION

Hatchery	Eyed Eggs	Advanced Fry	Fingerlings No. 1	Fingerlings No. 2
Waterton	116,034	100,000	700,730	39,160
Banff	.....	381,000	806,720	255,000
Jasper	.....	157,342	.....	.....
TOTALS	116,034	638,342	1,507,450	294,160

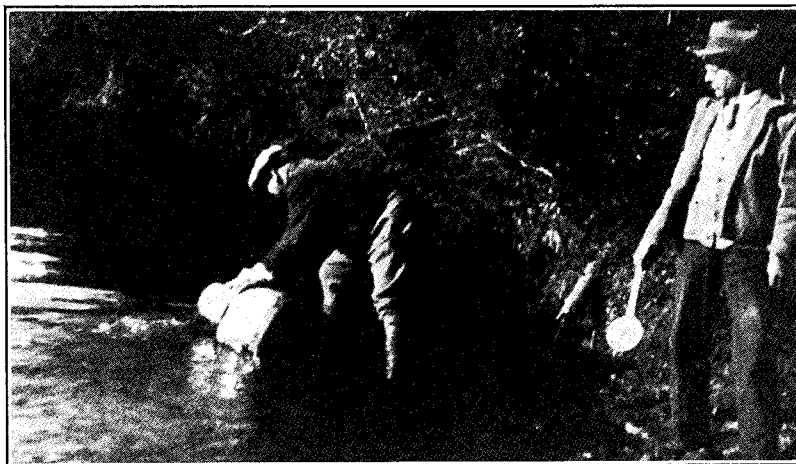
Eyed Eggs	116,034
Advanced Fry	638,342
Fingerlings No. 1	1,507,450
Fingerlings No. 2	294,160

Total distribution from the three hatcheries for the fiscal year ended March 31st, 1936	2,555,986
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During August tenders were submitted and contracts awarded for a supply of eyed eggs for next season's stocking. The Loch Leven eggs were for delivery to the Banff hatchery not later than January 31st, 1936, and those of the cutthroat and rainbow before June 15th, 1936, as follows:

Hatchery	Number	Species
Waterton	700,000	Rainbow trout eggs
	300,000	Cutthroat trout eggs
Banff	600,000	Rainbow trout eggs
	400,000	Cutthroat trout eggs
	500,000	Loch Leven trout eggs
Jasper	200,000	Rainbow trout eggs
TOTAL	2,700,000	

Lesser Slave Lake Hatchery.—This hatchery, which had been closed since May, 1933 was again placed in operation in the fall of 1935. The necessary staff was engaged at the spawning camp at Whitefish River about the first of October to install trays and retainers in readiness for the collection of whitefish eggs. The hatchery staff was engaged as required when the first eggs arrived from the spawning camp.



Planting rainbow fry in Prairie Creek west of Edson

The first collection of eggs was made on the 30th of October and the last on the 14th of November. The total collection made at Whitefish River was 158,700,000. As the capacity of the hatchery is approximately 133,000,000, 20,000,000 fertilized eggs were planted in the Whitefish River, 5,500,000 were planted in Lesser Slave Lake and the balance, 133,200,000, were placed in the hatchery. From November 16th to March 31st the total loss of eggs due to various causes was 19,702,000, leaving a balance of eggs in the hatchery at that date of 113,498,000.

Examination of Waters.—The following waters were examined with a view to stocking should they be found suitable for fish life:

Name of Lake	Location
McBride Lake	T. 7, r. 26, w4m.
R. L. Jackson's Pond	Sec. 32, t. 3, r. 28, w4m.
Lake "C"	Sec. 9, t. 43, r. 1, w4m.
Lake "A"	Sec. 3, t. 43, r. 1, w4m.
Lake No. 11	Sec. 24 and 26, t. 42, r. 1, w4m.
Dilberry Lake	Sec. 36, t. 41, r. 1, w4m.
Killarney Lake	T. 41 and 42, r. 1, w4m.
Lake No. 2	Sec. 26 and 27, t. 41, r. 1, w4m.
Lake No. 3	Sec. 35 and 36, t. 41, r. 1, w4m.
St. Lawrence Lake	Sec. 11 and 12, t. 39, r. 1, w4m.
Lake No. 1	Sec. 32, t. 36, r. 3, w4m.
Mather's Pond	Sec. 4, t. 37, r. 5, w4m.
Nelson's Pond	Sec. 33, t. 33, r. 5, w4m.
Lake No. 2	Sec. 35, t. 47, r. 6, w4m.
Lake "A"	W½ sec. 20, t. 49, r. 7, w4m.
Lake "B"	Sec. 31, 32 and 33, t. 49, r. 7, w4m.
Chappice Lake	Sec. 16 and 17, t. 14, r. 3, w4m.
Wager's Pond	Sec. 33, t. 35, r. 28, w4m.
Gusa's Pond	N.W.¼ sec. 7, t. 29, r. 14, w4m.
Lake No. 1, Leedale	Sec. 18, t. 42, r. 4, w4m.
Rose Creek (Wolf Creek)	T. 42 and 46, r. 4, w5m.
Lake No. 2	S.W.¼ sec. 27, t. 48, r. 6, w4m.
East Berry Creek	Sec. 35, t. 23, r. 11, w4m.

Of these lakes examined 14 were found to be unsuitable for fish life. One was found to be suitable for trout and 8 were found to be suitable for perch or pike. Wolf Creek requires further examination.

In addition to these inspections the following waters were stocked with rainbow trout and perch:

Jackson's Pond	Sec. 32, t. 3, r. 28, w4m	Rainbow trout
Lake "C"	Sec. 9, t. 43, r. 1, w4m	Perch
Lake "A"	Sec. 33, t. 43, r. 1, w4m	Perch
Lake No. 11	Sec. 23, t. 42, r. 1, w4m	Perch

As previously stated, most gratifying reports have been received during the year of success in the introduction of Loch Leven trout into the tributaries of the North Saskatchewan and Red Deer rivers. Some excellent specimens of these fish were taken during the year and from the reports of various anglers it is evident that fishing for this species of trout in these rivers and their tributaries is improving from year to year. Reports on the success of the introduction of rainbow trout into the streams in southern Alberta are also encouraging. The same might be said with regard to the introduction of perch and pickerel into various small lakes where previously no fish were found.

BIRD SANCTUARIES AND PUBLIC SHOOTING GROUNDS

During the summer of 1935, in conjunction with a representative of the Dominion Parks Branch, examinations were made of a number of the bird sanctuaries and public shooting grounds, with a view to determining those which were no longer suitable for this purpose and which, therefore, should be cancelled. Drought conditions during the last ten or fifteen years have caused some of these areas to be no longer of any great value as water-fowl sanctuaries or shooting grounds. Other areas were examined on recommendations from various fish and game associations with a view to consideration of their suitability as sanctuaries to replace those which might be cancelled.

REGULATIONS APPERTAINING TO PLEASURE BOATS

The enforcement of regulations appertaining to pleasure boats was again carried out by the Fisheries inspectors without much difficulty, a few complaints regarding the operation of speed boats at some of the summer resorts being received which were quickly attended to. The nuisance of open mufflers was occasionally reported by cottagers as an annoyance. All complaints were given the necessary attention.

ITEMIZED REVENUE OBTAINED DURING FISCAL YEAR 1935-36

Month	Fishermen's Licenses	Domestic Licenses	Commercial Licenses	Boat Licenses	Angling Permits	Sales	Sundry	Total
1935—								
April	\$ 15.00	\$ 12.00	.....	.....	\$ 2.00	.....	\$ 16.66	\$ 45.66
May	1,225.00	100.00	70.00	10.00	6.75	14.65	16.66	1,443.06
June	200.00	226.00	10.00	30.00	1,481.00	25.60	16.66	1,999.26
July	90.00	84.00	.....	30.15	3,270.00	.....	16.66	3,520.81
August	465.00	66.00	90.00	55.00	1,618.75	83.20	16.66	2,394.61
September	370.00	42.00	80.00	10.00	1,018.25	29.00	16.66	1,565.91
October	40.00	14.00	.....	.....	1,140.00	1.65	16.66	1,212.31
November	515.00	30.00	.....	.....	464.00	78.02	16.66	1,103.68
December	2,645.00	526.00	20.00	.....	120.00	31.95	16.66	3,359.61
1936—								
January	1,980.00	88.00	.....	.....	12.00	81.03	16.66	2,177.69
February	475.00	40.00	.....	.....	.....	129.33	16.66	660.99
March	565.00	18.00	.....	.....	48.00	482.08	16.74	1,129.82
TOTALS	\$ 8,585.00	\$ 1,256.00	\$ 270.00	\$ 165.15	\$ 9,180.75	\$ 956.51	\$ 200.00	\$20,613.41

Accounting Division

REPORT OF THE ACCOUNTANT, I. N. MCKINNON

A surplus of \$647,931.21 on income account was shown for the fiscal year ending March 31, 1936, an increase of \$1,402.24 over the previous year.

Revenue for the year was \$1,152,475.78, a decrease of \$17,020.37. Expenditure was \$504,544.57, a decrease of \$18,422.61.

Total cash received from all sources amounted to \$1,310,890.21, particulars of which are given in Statement "A".

Following the reorganization of the Department in April, 1935, changes were made in the system of recording revenue in order to conform with the new arrangement of administration and for the purpose of increased efficiency.

The revenue is now recorded under seven main headings, namely, Lands and Grazing Branch, Timber Branch, Mining Lands Branch, School Lands Branch, Fisheries Branch, Game Branch and Miscellaneous. Comparison of revenue with the previous fiscal year under the above headings is shown under Statement "B".

The allocation of all revenues received to the various land agencies, forest reserves, etc., from which they were derived, has been discontinued.

INDEX TO STATEMENTS

- A.—Statement of Cash Receipts from all sources.
- B.—Statement of Income Revenue by Branches.
- C.—Statement of Cash Receipts, School Lands Branch.
- D.—School Lands Trust Fund Balance Sheet.
- E.—Statement of Alberta School Lands Sales Revenue Account.
- F.—Statement of Collections on Tax Recovery Lands.
- G.—Statement of Homestead Entries Granted.

STATEMENT A.

STATEMENT OF CASH RECEIPTS FROM ALL SOURCES

From April 1, 1935 to March 31, 1936

	Gross Receipts	Refunds	Net Revenue
INCOME ACCOUNT:			
<i>Lands and Grazing Branch:</i>			
Cancellation Fees	\$ 94.00	\$ 4.00	\$ 90.00
Casual	3,914.10	13.85	3,900.25
Cultivation Fees, Rentals, etc.	1,454.55	177.11	1,277.44
Filing Authority Fees	948.00	2.00	946.00
Fur Farm Fees and Rentals	418.75	25.00	393.75
General Sales Interest	2,609.55	.30	2,609.25
Grazing Permits, Fees, Rentals, etc.	45,743.21	650.64	45,092.57
Hay Permits, Fees, Dues, etc.	3,071.26	380.50	2,690.76
Homestead Fees	15,280.00	50.00	15,230.00
Improvement Collection Fees	6,403.30	149.80	6,253.50
Surface Rentals	2,427.00	.....	2,427.00
<i>Timber Branch:</i>			
Casual	1,426.05	.....	1,426.05
Timber Permits, Fees, Rentals, etc.	303,522.68	984.42	302,538.26
<i>Mining Lands Branch:</i>			
Casual	4,276.70	27.50	4,249.20
Coal Fees, Rentals, etc.	118,162.55	421.00	117,741.55
Coal Mines Act Sundry Revenue	4,404.80	76.00	4,328.80
Coal Royalties	186,704.68	13.45	186,691.23
<i>Petroleum and Natural Gas:</i>			
Fees, Rentals, etc.	116,182.34	638.94	115,543.40
Royalties	117,468.36	.....	117,468.36
Drilling Permits	50.15	.....	50.15
Quarrying Fees, Rentals, etc.	1,490.94	80.00	1,410.94

DEPARTMENT OF LANDS AND MINES

<i>Fisheries Branch:</i>			
Angling Permits	9,997.50	2.00	9,995.50
Boat Licenses	165.15	.....	165.15
Casual	1,156.51	.....	1,156.51
Fishing Licenses	10,111.00	10.00	10,101.00
<i>School Lands Branch:</i>			
Interest on Sales	67,256.75	66.30	67,190.45
Miscellaneous†	138,632.35	34,235.61	124,396.74
<i>Miscellaneous:</i>			
Casual	4,993.79	90.65	4,903.14
Reimbursement of Salaries and Expenses	249.95	1.00	248.95
Tax Recovery Office Fees	1,707.90	87.10	1,620.80
Services and Supplies	339.08	.....	339.08
TOTAL INCOME ACCOUNT	\$1,190,662.95	\$ 38,187.17	\$1,152,475.78
CAPITAL ACCOUNT:			
Land Sales Principal	9,702.65	59.00	9,643.65
TOTAL INCOME AND CAPITAL ACCOUNTS	\$1,200,365.60	\$ 38,246.17	\$1,162,119.43
UNAPPLIED RECEIPTS CARRIED FORWARD: (Subject to Refund)			
Improvements	16,409.22	8,805.38	7,603.84
Suspense	30,229.29	.....	30,229.29
School Lands Cultivation Crop Shares	1,000.00	.....	1,000.00
Land Patents Cultivation Crop Shares	300.00	.....	300.00
.....	\$1,248,304.11	\$ 47,051.55	\$1,201,252.56
TRUST ACCOUNT:			
School Lands Trust Fund	\$ 62,555.30	.....	.....
Homesteaders' Trust Monies	23.60	.....	.....
Petroleum and Natural Gas Cash Bond	7.20	.....	.....
TOTAL CASH RECEIPTS	\$1,310,890.21	.....	.....

STATEMENT B.

STATEMENT OF INCOME REVENUE BY BRANCHES FOR FISCAL YEARS ENDING

March 31, 1935 and March 31, 1936

	Fiscal year ending March 31, 1935	Fiscal year ending March 31, 1936
Lands and Grazing Branch	\$ 113,198.92	\$ 80,910.52
Timber Branch	227,463.45	303,964.31
Mining Lands Branch	477,296.68	547,483.63
Fisheries Branch	19,949.89	21,418.16
School Lands Branch	327,787.36	191,587.19
Miscellaneous	3,799.85	7,111.97
.....	\$1,169,496.15	\$1,152,475.78

STATEMENT C.

SCHOOL LANDS BRANCH
STATEMENT OF CASH RECEIPTS

April 1, 1935 to March 31, 1936

	Receipts	Refunds	Net Revenue
INCOME ACCOUNT:			
Sales: Interest	\$ 67,256.75	\$ 66.30	\$ 67,100.45
Cultivation Fees, Rentals, etc.	78,734.32	18,787.37	59,946.95
License of Occupation and Special Leases	290.00	80.15	209.85
Timber Permits, Fees, Dues, etc.	18,616.37	843.56	17,772.81
Grazing Fees, Rentals, etc.	21,756.98	12,394.53	9,362.45
Hay Fees, Dues, etc.	972.30	116.25	856.05
Coal Fees, Rentals, etc.	5,398.41	.....	5,398.41
Coal Mining Royalties	19,779.76	.....	19,779.76
Petroleum and Natural Gas: Fees, Rentals, etc.	12,825.67	1,950.00	10,875.67
Petroleum and Natural Gas: Royalties	699.33	.....	699.33
Miscellaneous	559.01	63.75	495.26
.....	\$226,889.10	\$ 34,301.91	\$192,587.19
Less amount carried forward to provide for tax refunds on Cultivation Lease Crop Shares....	.....	.....	1,000.00
.....	\$226,889.10	\$ 34,301.91	\$191,587.19
TRUST ACCOUNT:			
School Lands Sales Principal	62,555.30	.....	62,555.30
TOTAL INCOME AND TRUST ACCOUNTS	\$289,444.40	\$ 34,301.91	\$254,142.49

ACCOUNTING DIVISION

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ALBERTA SCHOOL LANDS TRUST FUND BALANCE SHEET—MARCH 31, 1936

STATEMENT D.

ASSETS			
Cash in Bank and on Hand		\$ 6,142.81	
Investments:			
Dominion of Canada Debentures	\$9,888,647.07		
Accrued Interest	302.80		
		\$ 9,888,949.81	
Accounts Receivable:			
Undue Principal	\$1,984,051.43		
Arrears Principal	1,643,008.71		
		3,627,060.14	
			<u>\$13,522,152.76</u>
LIABILITIES			
Alberta School Lands Trust Fund	\$13,522,143.72		
Suspense	9.04		
			<u>\$13,522,152.76</u>

ALBERTA SCHOOL LANDS SALES REVENUE ACCOUNT

STATEMENT E.

FOR THE PERIOD APRIL 1, 1935 TO MARCH 31, 1936			
Arrears Interest as at March 31, 1935	\$1,333,378.58		
Interest charged	332,338.55		
Interest Revenue		\$ 67,190.45	
Interest Bonus granted		67,039.33	
Interest on Cancelled Sales written off		219,321.10	
Arrears Interest as at March 31, 1936		1,312,166.25	
	<u>\$1,665,717.13</u>		<u>\$1,665,717.13</u>

STATEMENT OF COLLECTIONS ON TAX RECOVERY LANDS April 1, 1935 to March 31, 1936

STATEMENT F.

Improvements	\$ 1,167.47	
Cultivation Rentals, etc.	799.57	
Cultivation Crop Shares	3,737.27	
Miscellaneous Rentals	252.69	
Grazing Permits	905.09	
Grazing Rentals, etc.	1,519.71	
Sales, Principal	464.45	
Sales, Interest	23.20	
	\$ 8,869.45	
Office Fees	1,620.80	
	<u>\$ 10,490.25</u>	

HOMESTEAD ENTRIES GRANTED April 1, 1935 to March 31, 1936

STATEMENT G.

	Homesteads	Second Homesteads	Soldier Grants	Total	Entries to Women
Edmonton Land District	820	102	7	929	254
Calgary Land Agency	66	21		87	24
Lethbridge Land Agency	2	7		9	1
Peace River Land Agency	441	56	6	503	176
	<u>1,329</u>	<u>186</u>	<u>13</u>	<u>1,528</u>	<u>455</u>

